

**Monitoring implementation of the BEREC
Common Positions on Wholesale Local Access
(WLA), Wholesale Central Access (WCA) and
Wholesale High Quality Access at a Fixed
Location (WHQAFL)**

Phase 3

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I. EXECUTIVE SUMMARY

Over the last few years BEREC has undertaken a programme of work which involved revising its broadband common positions (CPs) (relating to the relevant markets 4, 5 and 6 as outlined by the Commission Recommendation of 2007)¹ and developing a methodology to monitor how NRAs are implementing these. Between 2014-2016, BEREC carried out three monitoring exercises of how NRAs have been implementing the CPs. The three monitoring exercises allow for the full three-year cycle between market reviews to be covered by this Common Position work.

In 2014 BEREC carried out its first (Phase 1) monitoring exercise and the report was adopted in December 2014². In 2015, BEREC carried out its second (Phase 2) monitoring exercise and the report was adopted in December 2015³. This report sets out the results of the third and final part (Phase 3) of the monitoring exercise which was carried out during 2016. The report is a result of the information provided by NRAs, in response to a questionnaire sent by the EWG-REM on 15 April 2016 (with a deadline of reply no later than 27 May 2016). Whilst we granted some further extensions to the timeline for submission, it is nevertheless the case that some notifications just missed the deadline for inclusion in this year's report. Next year, BEREC will take stock of the results of the monitoring exercise and apply any learnings to a wide ranging scoping exercise that will assess whether there may be a need for any revision to BEREC's broadband common positions.

This Executive Summary provides an overview of the key themes from all three monitoring exercises so as to provide a more complete picture of NRA practices across the EU. The main body of this report relates only to the latest phase (Phase 3) of the monitoring exercise, i.e. it focuses on NRA market reviews that have been notified between July 2015 and July 2016 as market reviews that were notified prior to this time period have already been comprehensively covered in the Phase 1 and Phase 2 reports.

In keeping with the terminology adopted in the Phase 2 report, we refer to the relevant markets using updated descriptions based on the new Commission Recommendation on relevant markets of October 2014, in which the previous Market 4 (WLA) is referred to as Market 3a,

¹ COMMISSION RECOMMENDATION of 17 December 2007 on relevant product and service markets within the electronic communications sector susceptible to *ex ante* regulation in accordance with Directive 2002/21/EC.

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2007:344:0065:0069:en:PDF>

² BoR (14) 171, Monitoring implementation of the BEREC Common Positions on WLA, WBA and WLL, Phase 1, 4.12.2014.

http://berec.europa.eu/eng/document_register/subject_matter/berec/reports/4788-monitoring-implementation-of-the-berec-common-positions-on-wla-wba-and-wll-phase-i

³ BoR (15) 199, Monitoring implementation of the BEREC Common Positions on Wholesale Local Access (WLA), Wholesale Central Access (WCA) and Wholesale High Quality Access at a Fixed Location (WHQAFL) Phase 2. 07.12.2015.

http://berec.europa.eu/eng/document_register/subject_matter/berec/reports/5547-monitoring-implementation-of-the-berec-common-positions-on-wholesale-local-access-wla-wholesale-central-access-wca-and-wholesale-high-quality-access-at-a-fixed-location-whqafl-phase-2

the previous Market 5 (WBA) is referred to as Market 3b (WCA) and the previous Market 6 (WLL) is referred to as Market 4 (WHQAFL).

Our analysis in this report focuses on NRAs that have notified decisions relating to market reviews in the relevant WLA, WCA and WHQAFL market since we collected the data for the Phase 2 Report (up to the end of July 2015). We refer to these NRAs as the 'participants' in each of the relevant markets.⁴

We have broken our analysis down into ten sections, each pertaining to one of the competition objectives identified in the revised common positions and the best practices relevant to these in each of the relevant markets. We have also added another section that outlines innovative approaches to regulation (across markets and across the ten objectives).

We now have a much more complete picture of whether, how and why NRAs are adopting best practices (or not). The results of the three phases of work we have completed to date are broadly consistent. The main difference we observe is that increasingly more NRAs are implementing EOI, particularly in relation to NGA products. We have also seen a continuation of the theme from last year in which NRAs are increasingly conducting their Market 3a (WLA) and Market 3b (WBA) reviews together. This is due to the dependency of the Market 3b review on the outcomes of the Market 3a review as well as the remedies which in some cases share some common characteristics being applied to both Market 3a and Market 3b.

Based on the results of the monitoring exercises we have completed to date, we conclude that participants are following the broadest or high level best practices relating to each of the competition objectives. There are some differences in terms of the implementation of some of the more detailed best practices which are driven by the following factors:

- State of competition in the market: e.g. in some markets all or large parts of the WCA market have been deregulated;
- The development of NGA;
- Basis of competition: e.g. whether competition is predominantly based on active or passive access;
- The NGA infrastructure adopted by the SMP and alternative operators: e.g. FTTC versus FTTP.

It is worth noting that certain best practices may only be applicable to certain circumstances (e.g. the deployment of a particular type of network infrastructure) and therefore the fact that an NRA has not implemented a particular best practice does not suggest there may be a concern.

⁴ The participants are as follows: WLA market – Bulgaria, France, Iceland, Luxembourg, Netherlands, Sweden, Turkey, Czech Republic, Germany, Lithuania, Serbia, Denmark, Italy, Romania, Spain; WCA market – Bulgaria, France, Iceland, Luxembourg, Poland, Sweden, Turkey, Czech Republic, Germany, Lithuania, Denmark, Italy, Romania, Spain; WHQAFL market – Austria, Croatia, Cyprus, France, Iceland, Italy, Latvia, Luxembourg, Turkey, Bulgaria, Czech Republic, Poland, UK, Lithuania, Serbia, Spain.

Further, whilst the report discusses whether NRAs have imposed particular best practices under relevant market review procedures, it is not intended to assess whether the reasons for not imposing a particular best practice are justified or not, or what the effect of the imposition or otherwise of a specific best practice by a given NRA might be. Set out below is a high level overview of our analysis by competition objective.

In terms of **assurance of access** all NRAs have imposed obligations requiring SMP operators to provide proportionate access products. However, the evolving level of competition has led to different approaches to finding SMP and imposing remedies in Markets 3a and 3b. For example, in Romania, no operator was found to have SMP in Market 3a as the NRA found the market to be effectively competitive. In Lithuania, retail competition was found to be effective but remedies were retained for physical infrastructure as this was the basis for effective retail competition. In Spain, remedies were geographically differentiated due to diverging competitive conditions in different municipal areas. In Germany, the NRA had to balance the requirement for assurance of access with maximising consumer welfare by allowing vectoring to be deployed in certain 'near side' areas which had an impact of changing assurance of access in these areas from physical unbundling to Layer 2 and Layer 3 bitstream access.

In almost all cases, NRAs follow the ladder of investment principle and encourage infrastructure competition at the deepest level of the network. In Lithuania, no active remedies have been imposed and in Germany, access to FTTH is based on unbundling as everything else is classed as bitstream access. In the Netherlands, fibre unbundling was mandated and as a result, no active FTTH remedy was imposed. In Market 4 (WHQAFL), there was consistency in applying the principles of appropriate and proportionate access (BP1) but there were differences in how markets were defined. Some countries such as the Czech Republic and Poland defined markets according to speed (above and below 2Mbps) and others such as the UK defined markets according to the level of infrastructure competition in geographic regions and technology (TDM versus Ethernet / WDM). The UK introduced a passive remedy (dark fibre) alongside active remedies in geographic areas where there is continued SMP. Most NRAs stated that they encouraged competition at the deepest reasonable level (BP3).

With respect to **assurance of collocation access points**, NRAs have generally imposed obligations in line with best practice which includes clear rules and terms and cost oriented prices for collocation services. In some cases, (e.g. France WHQAFL), pricing obligations vary by the degree of competitiveness in a given geography with cost orientation applying where there is no competition, and margin squeeze rules applying in areas of emerging competition. In the Czech Republic, cost orientation was imposed in market 3a (WLA) but margin squeeze rules were imposed in market 3b (WCA) due to the high level of infrastructure-based competition in the retail market that is enabled by the remedies imposed in Market 3a. In Sweden (WHQAFL), the NRA imposed obligations for the SMP operator to offer co-location and associated facilities on a non-discriminatory basis but it did not impose cost orientation. Market 3b has been partially or completely deregulated in a number of member states. In Malta, it was deregulated in 2008 and in the Netherlands and Austria, it is deregulated for residential users and therefore remedies were imposed only for business users.

In relation to a **level playing field**, all NRAs have imposed general non-discrimination obligations and provided clarifications on how these should be interpreted either through specific SMP conditions, guidance or a combination of the two.

In the WLA market all NRAs except for Romania (where no operator was found to have SMP) and Bulgaria have imposed EOI obligations to some degree. This is particularly pronounced for NGA access which usually requires new and different ordering systems while EOO rules are applied where EOI is not cost justified, e.g. in relation to access to copper products. In the WCA market, although all NRAs have imposed some form of equivalence obligation, only Spain and the Czech Republic imposed EOI (for next generation products) while some NRAs rely on EOI at the upstream / WLA level. In the WHQAFL market (with the exception of the UK), NRAs have either imposed EOO or no specific equivalence obligation. The UK has imposed EOI for all wholesale leased lines based on modern (Ethernet / WDM) technologies and for dark fibre. The specifics depend on whether NRAs consider there is a lack of demand for wholesale products (e.g. Latvia wholesale leased lines) or the basis on which the SMP operator delivers its wholesale products (e.g. France where the SMP provider relies on passive access to deliver wholesale leased lines. Duct access is subject to EOI under the WLA market).

No NRA has imposed functional separation under the market review process but the Iceland NRA has accepted voluntary undertakings of functional separation by the SMP operators. SMP operators in the Czech Republic and Serbia have also undergone voluntary separation. In the UK, the NRA accepted a voluntary undertaking of functional separation by the SMP operator.

With respect to **avoidance of unjustified first-mover advantage**, the Latvian NRA has not imposed any requirement for technical or economic replicability for new downstream services since it considered there was NGA infrastructure competition between the SMP operator and alternative operators. Mostly, NRAs have generally imposed requirements that ensure the technical and economic replicability of new downstream services introduced by SMP operators. In Italy, the SMP operator cannot offer the retail product if it fails a replicability test and in this situation, the NRA insists on another test of the product in the case where the product is modified. In Norway, the SMP operator has to negotiate with alternative operators to agree the technical characteristics of new wholesale services. With respect to economic replicability, some NRAs rely on competition law rather than ex ante rules (e.g. France) while others impose cost orientation (e.g. Luxembourg for wholesale leased lines). The Austrian NRA relies on the non-discrimination obligation for the introduction of new wholesale products. In Germany, with regard to technical replicability, the NRA requires a modified Reference Offer when launching new products. Regarding WHQAFL, the Swedish NRA does not consider it necessary to impose technical; replicability as leased lines are provided according to international technical standards (SDH, ethernet).

NRAs have adopted different practices in relation to notice periods for the launch of new products and new networks and the withdrawal of legacy products. Most NRAs have notice periods although the NRA in the Czech Republic has not imposed any such requirement as there have not been any relevant cases.

In some cases, NRA pre-approval is required while some NRAs rely on the general access / no undue discrimination obligation or the reference offer process to minimise the risk of unfair advantage.

In terms of **transparency**, all NRAs have required SMP operators to provide clarity around the terms of access through the publication of a Reference Offer.

The best practices regarding the information that is included in the Reference Offer and how this is updated are also mostly adhered to although the record is more mixed when it comes to specifically requiring SMP operators to take account of the views of wholesale customers in the Reference Offer.

Regarding the setting up of a civil infrastructure database, the record is mixed with some NRAs requiring the setting up of a civil infrastructure database containing information on the ducts of the SMP operator while the majority do not.

With respect to **reasonable quality of access – technical**, NRAs have imposed requirements to ensure a reasonable technical quality of access, through requiring information to be made available to alternative operators. NRAs require SMP operators to meet all reasonable requests and to publish detailed information on access products. There is less adherence to the best practice around encouraging SMP operators to adhere to technical standards as this is considered not to be necessary as SMP operators should be incentivised to comply with technical standards.

In terms of **reasonable quality of access – operational**, NRAs have a requirement for SMP operators to adhere to reasonable service levels (though the use of SLAs, SLGs and KPIs) and in most cases, NRAs oversee the process of setting SLAs, SLGs and KPIs. The UK NRA does not define a 'reasonable level of service' but it has imposed minimum QoS standards on provisioning and repair for wholesale line rental, LLU and Ethernet products. The picture regarding adherence to the best practice that SLAs should take into account different customer requirements is mixed because some NRAs consider that different technologies are geared towards different types of customers and that technological neutrality should avoid scope for discrimination between different types of customers. In Market 4 (WHQAFL), NRAs do not require SLAs to reflect customer differences as market circumstances do not justify such a distinction.

Concerning **assurance of efficient and convenient wholesale switching**, NRAs have tended to impose requirements to ensure that the wholesale switching process is efficient and speedy and that the price and timeliness of switching does not act as a barrier to competition in the WLA and WCA market (but less so in the WHQAFL market where customers tend to require a new circuit to be installed before removing an old circuit). NRAs have, however, mostly not imposed specific measures relating to bulk wholesale switching processes quoting limited demand for such a process or the fact that operators should be able to plan such bulk switching processes by working with the SMP provider.

In relation to **assurance of efficient migration processes from legacy to NGN/NGA networks**, most NRAs require that switching procedures apply equally between legacy and NGN/NGA products. France does not do so because it considers that the processes are very

different as NGA access is based on passive infrastructure. NGA also carries symmetric regulation whereas copper does not. In the UK, the NRA has not imposed any obligations as there is no planned decommissioning of the legacy network. In Cyprus, the NRA has not considered a switching process because the SMP operator's topology was not known at the time of the market 3a review. The requirement for switching procedures applying equally between legacy and NGN/NGA products is less prevalent in the WHFAQL market as it was not considered necessary.

Regarding notice periods for de-commissioning legacy networks, there is some variation in NRA approaches. Some NRAs specify a period of notice that must be given whilst others require that obligations to supply continue whilst there are still "live" customers on the network. Notice periods can vary (3-5 years is common) with an option for these to be varied following NRA approval. In Germany, the NRA has not set a migration framework for legacy framework de-commissioning because it does not foresee this happening in the near future.

Lastly, **in relation to fair and coherent access pricing**, all NRAs have imposed some form of price regulation based on an efficient entrant whether explicitly or implicitly through non-discrimination obligations and in some cases margin squeeze guidance. NRAs have generally imposed requirements that ensure (with reasonable certainty) that the price of access will permit an efficient entrant to compete with the SMP operator; and that this incentivises efficient investment and sustainable competition.

Most NRAs have not made any separate NGA risk adjustment and have in fact taken explicit steps to ensure that the pricing of NGA products is consistent with that of legacy products and that NGA discounts are not discriminatory.

Regarding **innovative approaches to regulation**, in Germany, the NRA, after having put in place measures to protect competition, has enabled the widespread deployment of vectoring, which in turn might lead to an increase in competing providers using Market 3b (WCA) remedies (e.g. bitstream) as well as Market 3a (WLA) remedies (e.g. VULA) which would be change of mix from the pre-vectoring deployment when most CPs were relying on Market 3a remedies (LLU). In the UK, the NRA has imposed minimum quality of standards for the provision of WLR, LLU and ethernet leased lines as it found that EoI alone was insufficient to improve QoS. It found that performance levels from the SMP operator were not reflective of a competitive market and that the incumbent had insufficient incentive to improve under a general EoI framework.

II. INTRODUCTION

1. Why this work?

This is a monitoring exercise to understand how NRAs are implementing BEREC's revised broadband common positions.

The monitoring exercise relates to the relevant markets 4, 5 and 6 as outlined by the Commission Recommendation of 2007. However, in light of the new Commission

Recommendation on relevant markets in October 2014,⁵ we have switched from the old terminology that was used in the Phase 1 report to the new terminology for the relevant markets that were used in last year's Phase 2 report and in this (Phase 3) report. These changes are illustrated in the table below.

Table 1: Revised market descriptions based on Commission Recommendation of Relevant Markets (October 2014)

Revised market descriptions to be referred to in the Phase 2 and Phase 3 reports	Previous market descriptions adopted in Phase 1 Report
Wholesale local access at a fixed location (WLA) or Market 3a	Wholesale Local Access Market (WLA) or Market 4
Wholesale central access for mass-market products (WCA) or Market 3b	Wholesale Broadband Access (WBA) or Market 5
Wholesale high-quality access at a fixed location (WHQAFL) or Market 4	Wholesale Leased Lines Market (WLL) or Market 6

The monitoring exercise has been carried out over three years to allow for the full cycle of market reviews to be carried out by all NRAs (as per the requirement for a market review to be undertaken every three years). This report sets out the results of Phase 3 of the monitoring exercise which was carried out in the first half of 2016. The results presented here therefore include notifications made by NRAs (between circa July 2015 and July 2016). The report also includes an Annex summarising results for all three phases of the monitoring exercise.

1.1. The process so far

In 2012, following a public consultation, BEREC adopted its revised Common Positions (CPs) listing the best practice remedies to be used in the following three wholesale markets:

- Revised BEREC Common Position on best practice in remedies on the market for wholesale (physical) network infrastructure access (including shared or fully unbundled access) at a fixed location imposed as a consequence of a position of significant market power (SMP) in the relevant market (the WLA CP);
- Revised BEREC Common Position on best practice in remedies on the market for wholesale broadband access (including bitstream access) imposed as a consequence of a position of SMP in the relevant market (the WCA CP);
- Revised BEREC Common Position on best practices in remedies as a consequence of a SMP position in the relevant markets for wholesale leased lines (the WHQAFL CP).

Application of the best practices contained in the CPs will assist NRAs in designing effective remedies in line with the objectives of the Framework.

⁵ COMMISSION RECOMMENDATION of 9 October 2014 on relevant product and service markets within the electronic communications sector susceptible to *ex ante* regulation in accordance with Directive 2002/21/EC.
<https://ec.europa.eu/digital-agenda/en/news/commission-recommendation-relevant-product-and-service-markets-within-electronic-communications>

Consistent with its work programme for 2013, BEREC then developed a methodology to monitor how NRAs have implemented the BPs recommended in the revised CPs⁶.

During 2014 and 2015 BEREC carried out the first two phases of the monitoring exercise. The reports were adopted by BEREC in December 2014⁷ and December 2015 respectively⁸. In 2016, BEREC carried out the third and final phase of the monitoring exercise.

1.2. The focus of the current exercise

Below and in the subsequent sections we briefly summarise the results and key messages emerging from the Phase 3 monitoring exercise. As explained above, the results presented in the main body of this document include notifications made by NRAs subsequent to the compilation of the Phase 2 Report and up to July 2016. These NRAs are referred to as 'participants' in each of the relevant markets. In Annex 3 we also summarise the results of all three phases of the monitoring exercise. This annex includes NRAs that have notified after 7 December 2012 up to the end of July 2016.

2. Approach to the analysis

As discussed in the Monitoring methodology which BEREC published in 2013,⁹ to assist in this task, BEREC developed a detailed Excel based questionnaire to be completed by individual NRAs.

The questionnaires were structured along the competition objectives listed in each CP. In addition, and in order to avoid introducing any unintended bias, at least one question is associated with each BP (in cases where a BP is too long or made up of several elements, further questions were included). Moreover, several questions were added which were more general in nature and which aimed to capture the high level policy considerations underpinning the overall regulatory approach implemented by each NRA.

⁶ BoR (13) 108, Methodology for monitoring the application of the BEREC common positions on WLA, WCA and WHQAFL, 16.09.2013.

http://berec.europa.eu/eng/document_register/subject_matter/berec/regulatory_best_practices/methodologies/1478-methodology-for-monitoring-the-application-of-the-berec-common-positions-on-wla-wba-and-wll

⁷ BoR (14) 171, Monitoring implementation of the BEREC Common Positions on WLA, WBA and WLL - Phase I, 04.12.2014.

http://berec.europa.eu/eng/document_register/subject_matter/berec/reports/4788-monitoring-implementation-of-the-berec-common-positions-on-wla-wba-and-wll-phase-i

⁸ BoR (15) 199, Monitoring implementation of the BEREC Common Positions on Wholesale Local Access (WLA), Wholesale Central Access (WCA) and Wholesale High Quality Access at a Fixed Location (WHQAFL) Phase 2, 07.12.2015.

http://berec.europa.eu/eng/document_register/subject_matter/berec/reports/5547-monitoring-implementation-of-the-berec-common-positions-on-wholesale-local-access-wla-wholesale-central-access-wca-and-wholesale-high-quality-access-at-a-fixed-location-whqafll-phase-2

⁹ BoR (13) 108, Methodology for monitoring the application of the BEREC common positions on WLA, WCA and WHQAFL, 16.09.2013.

http://berec.europa.eu/eng/document_register/subject_matter/berec/regulatory_best_practices/methodologies/1478-methodology-for-monitoring-the-application-of-the-berec-common-positions-on-wla-wca-and-whqafll

The information gathered has been provided through a self-certification process. Therefore, although BEREC has considered the accuracy of the information in the round (and sought clarifications where necessary) it has not cross-checked each response against each NRA's published decision.

The table below sets out the participant NRAs in each of the three phases of the monitoring exercise (the Danish NRA responses on the WLA and WCA markets were based on draft market decisions):

Table 2: Participants in Phase 1, Phase 2 and Phase 3 CP Monitoring exercises¹⁰

	WLA market	WCA market	WHQAFI market
Phase 1 participant NRAs	Austria, Croatia, Cyprus, Estonia, Ireland, Latvia, Malta, Netherlands, Norway, UK	Austria, Croatia, Cyprus, Estonia, Ireland, Latvia, Malta, Netherlands, Norway, UK	Belgium, Greece, Ireland, Spain, Sweden, UK
Phase 2 participant NRAs	Bulgaria, France, Iceland, Luxembourg, Netherlands, Sweden, Turkey	Bulgaria, France, Iceland, Luxembourg, Poland, Sweden, Turkey	Austria, Croatia, Cyprus, France, Iceland, Italy, Latvia, Luxembourg, Turkey
Phase 3 participant NRAs	Czech Republic, Germany, Lithuania, Serbia, Denmark, Italy, Romania, Spain	Czech Republic, Germany, Lithuania, Denmark, Italy, Romania, Spain	Bulgaria, Czech Republic, Poland, UK, Lithuania, Serbia, Spain

Where NRAs have notified the same market twice in the three-year period, we have only looked at the most recent notification.

3. Structure of this report

Section III provides our analysis of responses. The section has been split into sub-sections each pertaining to one of the ten Competition Objectives outlined in BEREC's Revised CP, as follows:

- Assurance of access;
- Assurance of co-location at the access point (e.g. MDF, street cabinet, concentration point) and other associated facilities;
- Level playing field;
- Avoidance of unjustified first mover advantage;
- Transparency;
- Reasonable quality of access products – technical issues;

¹⁰ In most cases, NRAs have notified Markets 3a and 3b together. The Polish NRA has not done so, due to the resource burden involved in conducting the two market review simultaneously. The Dutch regulator, ACM, filled in the questionnaire based on the draft decision. ACM notified its draft WLA decision end of October 2015. Also worth noting is that low quality bitstream is not regulated in the Netherlands.

- Reasonable quality of access products – operational aspects;
- Assurance of efficient and convenient wholesale switching;
- Assurance of efficient migration processes from legacy to NGN/NGA network; and
- Fair and coherent access pricing.

There is also an extra section in this Phase 3 report:

- Innovative approaches to regulation.

Each sub-section is then structured as follows:

- First, we provide a description of the competition issues identified by BEREC;
- Second, we summarise the Best Practice remedies relevant to addressing those competition issues;
- Third, we analyse the evidence pertaining to whether NRAs have imposed the Best Practice in each of the relevant markets. We summarise the responses to the questionnaire (according to each BP) in tables. Where NRAs have not imposed obligations relating to each BP an overview of the reasons for this is provided. In the tables that summarise the responses the following notation is used:

Table 3: Notation used in summary tables

✓	Impose obligations pertaining to BP
✗	Do not impose obligations pertaining to BP
[✓]	No, do not impose obligations, but conform to BP
n/a	Best practice is not applicable. For example, in cases where specific technology relevant to BP is not deployed and therefore BP is not required; or where market is deregulated.
✓/✗	In a limited set of cases a ✓/✗ is given. Where this is the case an explanation is provided in the text.

Annex 1 sets out a description of each of the Best Practices pertaining to the three markets considered in this report.

Annex 2 provides a list of participants in each of the three phases of the monitoring exercise.

Annex 3 provides an analysis of responses to all three phases of the monitoring exercise. Where NRAs have notified the same market twice, this report only assesses the latest notification.

III. ANALYSIS OF RESPONSES

1. Introduction

This section provides our analysis relating to whether NRAs are implementing the Best Practice remedies outlined in BEREC's Revised CPs.

We have received 12 responses to the questionnaire issued to NRAs in 2016 (see Annex 1 for a list of respondents). These NRAs are referred to as the 'participants'. In 2014 and 2015 the number of participants was 14 and 13 respectively.

2. Competition objective 1: Assurance of access

2.1. Background

The BEREC Common Positions state three competition problems that may arise across all three markets. First, operators with significant market power (SMP) may deny access to their networks. Second, SMP operators may restrict the use of services. Third, SMP operators may refuse to develop new access products on request from alternative operators.

The competition issues identified by BEREC are addressed by the Best Practices 1-15 in the WLA Common Position; Best Practices 1-9 in the WCA Common Position; and Best Practice 1-6 in the WHQAFL Common Position.

2.2. Analysis by best practice

2.2.1. WLA market

Since we collected data for the Phase 2 Report, the WLA market has been reviewed by 8NRAs ('the WLA participants'). In Romania, regulation has been withdrawn from the WLA market, since it was found to be effectively competitive. The response from Serbia was incomplete and further clarification is outstanding.

Table 4 summarises the best practice remedies that have been imposed for each of the WLA participants.

Table 4: Best practice remedies imposed by WLA participants

	Czech Rep.	Germany	Lithuania	Denmark	Italy	Spain	Romania	Serbia
<i>General remedy</i>								
BP1: appropriate and proportionate access products	✓	✓	✓	✓	✓	✓	n/a	✓
BP2: remedies based on ladder of investment	✓	✓	✓	✓	✓	✓	n/a	
BP3: encouraging infrastructure competition at deepest level reasonable	✓	✓	✓	✓	✓	✓	n/a	
BP4: access based on technology neutrality where proportionate	✓	✓	✓	✓	✓	✓	n/a	
BP5: remedy implementation based on viability	✓	✓	✓	✓	✓	✓	n/a	
<i>Access product at specific access point remedy</i>								
BP6a: P2P ODF handover	n/a	✗	✓	✓	✓	n/a	n/a	n/a
BP6b(i): MPoP access based on last splitter – P2MP design to take account of splitter location	✓	✗	n/a	✓	✓	✓	n/a	n/a
BP6b(ii): downstream MPoP access to include product between access point and MPoP	✓	✗	n/a	✓	✓	✓	n/a	n/a
BP6b(iii): appropriate product between MPoP and access point	✓	✗	n/a	✓	✓	✓	n/a	n/a
BP6b(iv): access required if concentration point in building basement	✗	✗	n/a	✓	✓	✓	n/a	n/a
BP6b(v): active remedy to replicate unbundling for MPoP until alternatives available	✓	✗	✗	✓	✓	✓	n/a	✗
BP7a: MDF based LLU	✓	✓	✓	✓	✓	✓	n/a	✓
BP7b: copper sub-loop unbundling for FTTN	✓	✓	n/a	✗	✓	✓	n/a	n/a
BP7c: FTTN active remedy replicating physical unbundling as much as possible	✓	✗	n/a	✓	✓	[✓]	n/a	n/a
BP8: in-house cabling access if not included in unbundled loop	[✓]	n/a	n/a	✓	n/a	[✓]	n/a	n/a
<i>Access products to reach access point remedy</i>								
BP9: access product from MPoP to access point	✓	✓	n/a	✓	✓	✓	n/a	n/a
BP10: regulated remedies for MPoP to operators' infrastructure	✓	✓	✓	✓	✓	✓	n/a	✗
BP11: prevention of strategic withholding of capacity	✓	✓	✓	✓	✓	✓	n/a	
BP12a: access to civil engineering infrastructure (inc manholes and derivation points)	✓	✗	✓	✗	✓	✓	n/a	
BP12b: rules for optimising duct space	✓	✓	✓	✗	✓	✓	n/a	✓
BP12c: cost oriented prices for civil infrastructure	✓	✓	✓	✗	✓	✓	n/a	✓

	Czech Rep.	Germany	Lithuania	Denmark	Italy	Spain	Romania	Serbia
BP13: dark fibre / leased lines subsidiary to duct access	*	✓	✓	✓	✓	✓	n/a	*
<i>General remedy</i>								
BP14: network access on reasonable request	✓	✓	✓	✓	✓	✓	n/a	✓
BP15: where access to new products not in RO, published process for new network access requests	✓	n/a	n/a	n/a	n/a	n/a	n/a	n/a
BP15a: details on process for new requests	✓	n/a	n/a	n/a	n/a	n/a	n/a	n/a
BP15b: timescales for new requests	✓	n/a	n/a	✓	n/a	n/a	n/a	*
BP15c: prompt access to new products where feasible	n/a	n/a	n/a	✓	n/a	n/a	n/a	*
BP15d: SMP obligations to apply to new products when made available	✓	✓	n/a	✓	✓	✓	n/a	*

In some countries covered in this report, the strategy for regulation has changed due to evolving competition in the market. For instance, in Lithuania, competition in retail markets has been found to be effective. Still, regulation needs to stay in place for physical infrastructure, as this is the basis for effective competition in the retail market there. In Romania, no operator has been found to hold an individual SMP position on the WLA market any more. Hence, no remedies were imposed. In Spain, remedies are geographically differentiated due to diverging competitive conditions in different municipalities. On the other hand, in Germany, vectoring was made possible in areas where alternative operators have not already deployed DSL in the majority of street cabinets.

In relation to BP6b (access product at specific access point), the Czech Republic states that products are available only with common use of unbundling. In Serbia, the SMP operator does not have a P2P network and it is not technically possible to offer an access point downstream of the MPoP. In Germany, access to FTTH has to be unbundled access as it considers other remedies to constitute bitstream access, i.e. it mandates both unbundled fibre access and bitstream. In Lithuania and Spain, this rule is not applicable, because no one SMP operator's FTTH network is P2MP. In Denmark, alternative operators no longer request SLU and therefore, the SLU incumbent is obliged to offer access to VULA. With regard to BP6b (v), i.e. active remedies to replicate unbundling until alternatives are available, Lithuania has only imposed physical unbundling and no active remedies.

In Lithuania, BPs 7, 8 and 9 (relating to FTTN remedies) are not applicable, because no one SMP operator's network is based on FTTN architecture. With regard to BP8 (in-house cabling), in Italy, access to in-house cabling is not imposed under private law, but included in the fibre terminating segment and, hence, symmetric regulation.

In relation to BP 12 (duct access), Denmark does not conform with the BP as ducts are not regulated whereas in Serbia, duct access is specified in the Reference Offer.

With regard to BP 13 (duct access subsidiarity), backhaul is not generally imposed as an obligation in the Czech Republic.

In Lithuania, Italy, Spain and Serbia, BP 15 (access request for new products) is not applicable since access to new products and services is included through the review of the Reference Offer.

2.2.2. WCA market

Since we started collecting data for the Phase 2 Report, the WCA market has been reviewed by [7] NRAs ('the WCA participants'). In Romania, the market for WCA was never regulated and the retail market for broadband internet access was considered to be competitive without regulation of the wholesale market. The Romania NRA therefore found that ex-ante regulation was not justified.

Table 5 summarises the best practice remedies that have been imposed for each of the WCA participants.

Table 5: Best practice remedies imposed by WCA participants

	Czech Rep.	Germany	Lithuania	Denmark	Italy	Spain	Romania
BP1: appropriate and proportionate access products	✓	✓	✓	✓	✓	✓	n/a
BP2: remedies based on ladder of investment	✓	✓	✓	✓	✓	✓	n/a
BP3: encouraging infrastructure competition at deepest level reasonable	✓	✓	✓	✓	✓	✓	n/a
BP4: access based on technology neutrality where proportionate	✓	[✓]	✓	✓	✓	✓	n/a
BP5: bitstream access including handover	✓	✓	✓	✓	✓	✓	n/a
BP6: access product from MPoP to access point	✓	[✓]	✓	✓	✓	✓	n/a
BP7: prevention of strategic withholding of capacity	✓	[✓]	✓	✓	✓	✓	n/a
BP8: network access on reasonable request	✓	✓	✓	✓	✓	✓	n/a
BP9: where access to new products not in RO, published process for new network access requests	✓	n/a	n/a	n/a	n/a	n/a	n/a
BP9a: details on process for new requests	✓	n/a	n/a	n/a	n/a	n/a	n/a
BP9b: timescales for new requests	✓	n/a	✓	✓	n/a	n/a	n/a

	Czech Rep.	Germany	Lithuania	Denmark	Italy	Spain	Romania
BP9c: prompt access to new products where feasible	n/a	✓	n/a	✓	n/a	n/a	n/a
BP9d: SMP obligations to apply to new products when made available	✓	✓	n/a	✓	✓	✓	n/a

In Spain, two separate sub-national wholesale markets have been defined, resulting in 758 out of 8758 exchanges being found to be competitive. These two markets comprise not only FTTH access networks but also HFC networks which have been upgraded to DOCSIS 3.0. The local exchange is considered to be the relevant geographical unit and they are allocated to one of the two sub-national wholesale markets based on factors such as Telefonica's retail market share and the number of alternative operators that have at least 10% market share based on their own infrastructure such as LLU. In some regional city-wide markets in Germany, layer-3 bitstream access could be lifted due to lack of SMP on the condition that layer-2 bitstream access is made available.

In all countries except the Czech Republic, BP 9 (access to new products) is not or only partly applicable, as access to new products and services is generally included through the review of the Reference Offer.

2.2.3. WHQAFL market

Since we collected data for the Phase 2 Report the WHQAFL market has been reviewed by 7 NRAs ('the WHQAFL participants'). In Bulgaria, the NRA concluded that there was effective competition and therefore it has proposed to withdraw all remedies that had been imposed in its previous market notification. The response from Serbia was incomplete and is still awaiting completion.

Table 6 summarises the best practice remedies that have been imposed for each of the WCA participants

Table 6: Best practice remedies imposed by WHQAFL participants

	Czech Rep.	Lithuania	Poland	UK	Spain	Bulgaria	Serbia
BP1: appropriate and proportionate access products	✓	✓	✓	✓	✓	n/a	
BP2: remedies based on ladder of investment	✗	✓	✗	✓	✓	n/a	
BP3: encouraging infrastructure competition at deepest level reasonable	✓	✓	✗	✓	✓	n/a	

	Czech Rep.	Lithuania	Poland	UK	Spain	Bulgaria	Serbia
BP4: access based on technology neutrality where proportionate	✓	✓	✓	✓	✓	n/a	
BP5: network access on reasonable request	✓	✓	✓	✓	✓	n/a	✓
BP6: where access to new products not in RO, published process for new network	n/a	n/a	n/a	✓	✓	n/a	n/a
BP6a: details on process for new requests	n/a	n/a	n/a	✓	✓	n/a	n/a
BP6b: timescales for new requests	n/a	n/a	n/a	✓	n/a	n/a	n/a
BP6c: prompt access to new products where feasible	n/a	n/a	n/a	*	✓	n/a	n/a
BP6d: SMP obligations to apply to new products when made available	✓	✓	✓	✓	✓	n/a	

Some countries defined different markets according to speed in market 4. In the Czech Republic and Poland, two segments were identified: below and above 2 Mbps, and in both cases, SMP was found only for the market below 2 Mbps. As such, BP2 (remedies based on the Ladder of Investment) was not fulfilled in those countries as no remedies were imposed on higher speed products. In Poland, the NRA considered that the market is not likely to be developed and it did not find it reasonable to encourage operators to invest (similarly for BP3). In the UK, several distinct markets were defined according to geographic circumstances and type of technology (legacy SDH versus Ethernet / WDM). The Central London Areas was found to be effectively competitive. In the London Periphery (some outer London areas), lighter touch remedies were imposed. Moreover, the UK NRA made a shift from active to passive remedies by introducing a dark fibre remedy. In Lithuania, products were not differentiated according to speed, and services by different technology (Ethernet, DSL) are deemed to be in the same market.

In Spain, the NRA, in contrast to Market 3b, found the market to be national in scope and remedies and Telefonica was deemed to have SMP. A high quality bitstream service business, business NEBA, was created that has two features that differentiates it from a standard leased line product – traffic prioritisation and high quality customer service (shorter repair times). Copper based business NEBA remains subject to cost orientation.

BP 6 (access to new products) was not applicable for several countries (Czech Republic, Poland, Lithuania and Serbia), as access to new services/products is generally included through the review of the RO. The UK NRA noted in relation to BP 6c (prompt access to new products) that a request could theoretically at least be feasible but not reasonable.

3. Competition objective 2: Assurance of co-location at the access point (e.g. MDF, street cabinet, concentration point) and other associated facilities

3.1. Background

This BEREC Common Position refers to the competition issues relating to SMP operators providing access to associated facilities which are key to the provision of services in the relevant market and for measures being put in place to prevent SMP operators artificially restricting the usage of co-location and other associated facilities.

The competition issues identified by BEREC are addressed by Best Practice 16 in the WLA Common Position; Best Practice 10 in the WCA Common Position; and Best Practice 7 in the WHQAFL Common Position.

3.2. Analysis by best practice

3.2.1. WLA market

Since we collected data for the Phase 2 Report, the WLA market has been reviewed by 8 NRAs ('the WLA participants'). Table 7 summarises whether the best practice remedy in relation to the assurance of co-location at delivery points and other facilities has been imposed for each of the WLA participants.

In Romania, regulation has been withdrawn from the WLA market, since it was found to be effectively competitive. The response from Serbia was incomplete and so has not been included in our analysis.

Table 7: Best practice remedies imposed by WLA participants

	Czech Rep	Germany	Lithuania	Denmark	Italy	Spain	Romania	Serbia
BP16 – colocation and facilities on regulated, cost oriented terms	✓	✓	✓	✓	✓	✓	n/a	✓

3.2.2. WCA market

Since we collected data for the Phase 2 Report the WCA market has been reviewed by 7NRAs ('the WCA participants'). In Romania, the market for WCA was never regulated and the retail market for broadband internet access was considered to be competitive without regulation of

the wholesale market. The Romania NRA therefore found that ex-ante regulation was not justified.

Table 8 summarises whether the best practice remedy in relation to the assurance of co-location at delivery points and other facilities has been imposed for each of the WCA participants.

Table 8: Best practice remedies imposed by WCA participants

	Czech Rep.	Germany	Lithuania	Denmark	Italy	Spain	Romania
BP10: colocation and facilities on regulated, cost oriented terms	*	✓	✓	✓	✓	✓	n/a

With regard to BP 10, in the Czech Republic there is no price control obligation. Due to the incumbent undergoing voluntary separation and the high level of infrastructure-based competition in the retail market, this is no longer deemed relevant. Prior to the functional separation, a margin squeeze assessment had been done between WCA products and flagship products of the SMP operator.

3.2.3. WHQAFL market

Since we collected data for the Phase 2 Report the WHQAFL market has been reviewed by 7 NRAs ('the WHQAFL participants'). In Bulgaria, the NRA concluded that there was effective competition and therefore it has proposed to withdraw all remedies that had been imposed in its previous market notification. The response from Serbia was incomplete and so has not been included in our analysis.

Table 9 summarises whether the best practice remedy in relation to the assurance of co-location at delivery points and other facilities has been imposed for each of the WHQAFL participants.

Table 9: Best practice remedies imposed by WHQAFL participants

	Czech Rep.	Lithuania	Poland	UK	Spain	Bulgaria	Serbia
BP7: colocation and facilities on regulated, cost oriented terms	*	✓	✓	✓	✓	n/a	✓

The Czech Republic NRA imposed no co-location obligations on Market 4 since the corresponding obligations for market 3a are considered sufficient.

4. Competition objective 3: Level playing field

4.1. Background

This BEREC Common Position refers to the competition issue of alternative operators being unable to compete on a level playing field which may result in SMP players having an unfair advantage; having an unmatchable advantage; discriminating in favour of their own group business (or between its own wholesale customers); and exhibiting obstructive and foot-dragging behaviour.

The objective of level playing field ensures that all CPs that are downstream consumers of regulated wholesale outputs from the SMP operator have the right to wholesale products and services on an equal and non-discriminatory basis. The general non-discrimination obligation defines discrimination as any behaviour that unfairly favours to a material extent an activity carried on by the SMP operator so as to place one or more third parties at a competitive disadvantage in relation to activities carried on by the SMP operator. In essence, this objective exists to prevent the SMP operator from discriminating against other retail CPs in favour of its own downstream unit.

The competition issue identified by BEREC is addressed by the Best Practices 17-20 in the WLA Common Position; Best Practices 11-14 in the WCA Common Position; and Best Practices 8-11 in the WHQAFL Common Position.

4.2. Analysis by best practice

4.2.1. WLA market

Since we collected data for the Phase 2 Report, the WLA market has been reviewed by 8 NRAs ('the WLA participants'). In Romania, regulation has been withdrawn from the WLA market, since it was found to be effectively competitive.

Table 10 summarises the best practice remedies that have been imposed by each of the WLA participants.

Table 10: Best practice remedies imposed by WLA participants

	Czech Rep.	Germany	Lithuania	Denmark	Italy	Spain	Romania	Serbia
BP17: general ND remedy	✓	✓	✓	✓	✓	✓	n/a	✓
BP18: clarification of ND case by case	n/a	✓	n/a	n/a	n/a	✓	n/a	✓
BP19: equivalence (EOI, EOO or both)	✓	✓	✓	✓	✓	✓	n/a	✓
	both	EoO	hybrid	EoO	EoO	both	n/a	other
BP20: Functional Separation	✗	✗	✗	✗	✗	✗	n/a	✗

All WLA participants reported that they had imposed a general ND remedy. To minimise opportunities for indirect discrimination, The Commission considers that equivalence of inputs (EoI) is in principle the surest way to achieve effective protection from discrimination.¹¹ The Czech Republic, Germany, Lithuania, Denmark, Italy, and Spain have all imposed EoO. Some NRAs have chosen a hybrid approach in which EoO has been imposed on copper products and EoI has been used for next generation fibre products which require new and different ordering systems to those used for legacy copper products. For example, in Spain, EoO has been imposed on copper products and a 'near-EoI' approach has been applied to fibre products (in which the architecture for fibre products chosen by competing operators is not identical to the one used by the SMP operator for its retail services and therefore imposing strict EoI was not felt to be proportionate). Similarly, in the Czech Republic, the NRA has imposed EoO for copper products and EoI for fibre products (because implementation costs for building in EoI for new processes are relatively low compared to legacy processes that are used for copper products).

Regarding BP18, the clarification of non-discrimination on a case by case basis, a lot of NRAs have not felt the need for such clarification as no cases have emerged that required any further clarification beyond the general non-discrimination obligations. In both Spain and Germany, some further explanatory guidance has been provided in individual dispute resolution cases, e.g. in Germany the obligation to monitor KPIs has been made explicit in ex-ante regulatory orders and in Spain, the NRA has provided more detailed guidance and clarification in the context of dispute resolution (imposing fines on the SMP operator for non-compliance) and in infringement procedures initiated against the SMP operator. In Italy, the relevant regulation is ex-ante and so no such cases have emerged. In both the Czech Republic and in Denmark, no such cases have emerged and should they arise, they will be dealt on a case-by-case basis. Similarly, in Lithuania, there were no cases for which the general non-discrimination obligation was found to be insufficient but if any case were to arise, it would be dealt with on a case-by-case basis through dispute resolution.

Functional separation has not been imposed by any NRA although the SMP operator has undergone voluntary separation in the Czech Republic, Italy and Serbia. In the Czech Republic, former incumbent (O2) was voluntarily separated into separate legal and economic entities in June 2015. This includes separation of business and management, including accounting, security, informative and control systems. The operator CETIN operates only at the wholesale level, meanwhile the operator O2 operates only at the retail level (as the retail operator without its own infrastructure). The only exception is the mobile market, where O2 is still also the mobile network operator (MNO), so it operates in the wholesale market as well and concludes the interconnection agreements and access agreements (with mobile virtual operators (MVNOs)). The rights and obligations of ex-ante regulation were transferred to

¹¹ COMMISSION RECOMMENDATION of 11 September 2013 on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment - C(2013) 5761.

<https://ec.europa.eu/digital-single-market/en/news/commission-recommendation-consistent-non-discrimination-obligations-and-costing-methodologies>

CETIN, except for obligations on former relevant market no. 1 and the mobile termination market.

In Italy in 2008 AGCOM accepted Telecom Italia's (TI) commitment concerning a type of voluntary separation of its wholesale arm in order to grant equivalent access conditions to wholesale products for its competitors and to its retail arm in the form of EoO. TI's Commitments have been adopted with AGCOM's decision n. 714/08/CONS. Following the 2015 WLA and WCA market analyses, Telecom Italia has submitted a proposal for approval regarding commitments for a new equivalence model. AGCOM is currently reviewing TI's commitments under a specific proceeding which is expected to be concluded by the end of 2016 or the beginning of 2017.

4.2.2. WCA market

Since we collected data for the Phase 2 Report, the WCA market has been reviewed by 7 NRAs ('the WCA participants'). In Romania, the market for WCA was never regulated and the retail market for broadband internet access was considered to be competitive without regulation of the wholesale market. The Romania NRA therefore found that ex-ante regulation was not justified.

Table 11 summarises the best practice remedies that have been imposed for each of the WCA participants.

Table 11: Best practice remedies imposed by WCA participants

	Czech Rep.	Germany	Lithuania	Denmark	Italy	Spain	Romania
BP11: general obligation of ND	✓	✓	✓	✓	✓	✓	n/a
BP12: clarification of ND obligations on a case by case	n/a	✓	n/a	n/a	n/a	✓	n/a
BP13: equivalence obligation on SMP operators	✓	✓	✓	✓	✓	✓	n/a
	both	EoO	hybrid	EoO	EoO	both	n/a
BP14: Imposition of functional separation as remedy of last	✗	✗	✗	✗	✗	✗	n/a

There was a lot of consistency in the high level approach taken by NRAs to ensure a level playing field in the WCA market. With the exception of ANCOM in Romania which had found no operator had SMP, all WCA participants reported that they had imposed a general ND remedy as well as some type of equivalence obligation on SMP operators. No NRA had imposed functional separation although the SMP operators in the Czech Republic, Italy and Serbia had undergone voluntary separation.

Regarding BP12 (the clarification of non-discrimination obligations on a case by case basis), most NRAs had not had to deal with any cases that required further clarification through either

SMP obligations or in dispute resolution cases. In Germany and Spain, explanatory guidance was provided by NRAs through dispute resolution procedures and through the reference offer. In Spain, failure to comply with the principle of non-discrimination has also resulted in fines being imposed on the SMP operator.

Similar to the responses for the WLA market, there were some differences between the type of equivalence obligations used by NRAs and they were consistent with the approach taken by NRAs for the WLA market. Most NRAs have not imposed EoI and have imposed EoO or some type of hybrid equivalence obligation. Germany and Denmark, imposed EoO as the wholesale products for CPs used much of the same processes and infrastructure as the SMP operator's retail unit and the imposition of strict EoI was not deemed proportionate given the high costs for the SMP operator. In Italy, AGCOM has enhanced its EoO model by introducing stricter SLAs and penalties and introducing a new set of KPIs. Further, in order to enhance quality of service. AGCOM has also simplified retail provisioning processes by stipulating that access seekers and the SMP operator's retail unit have access to the same network and customer address databases ("equivalence of network information").

Similar to the WLA market, some NRAs (in Spain and Czech Republic) imposed EoO on legacy copper products and use EoI for next generation fibre products where the costs for building in EoI into new infrastructure and processes was less than it would be for older copper legacy services. In Spain, EoO was imposed for copper based products and a near-EoI model was chosen for fibre products (the architecture was chosen by CPs and does not strictly follow the one used by the SMP operator for its retail services. In Lithuania, a hybrid model was used in which both EoI and EoO have been adapted for both copper and fibre services according to the national circumstances.

4.2.3. WHQAFL market

Since we collected data for the Phase 2 Report, the WHQAFL market has been reviewed by 7 NRAs ('the WHQAFL participants'). In Bulgaria, the NRA concluded that there was effective competition and therefore it has proposed to withdraw all remedies that had been imposed in its previous market notification. The response from Serbia was incomplete and clarification on some questions remains outstanding. Table 12 summarises the best practice remedies that have been imposed for each of the WHQAFL participants.

Table 12: Best practice remedies imposed by WHQAFL participants

	Czech Rep.	Lithuania	Poland	UK	Spain	Bulgaria	Serbia
BP8: general obligation of ND remedy	✓	✓	✓	✓	✓	n/a	✓
BP9: clarification of ND obligations on a case by case basis	n/a	n/a	n/a	✓	✓	n/a	✓
BP10: equivalence obligation on SMP operators	✓	✓	✓	✓	✓	n/a	n/a
	EoO	hybrid	EoO	both	EoO		

	Czech Rep.	Lithuania	Poland	UK	Spain	Bulgaria	Serbia
BP11: Imposition of functional separation remedy of last resort	*	*	*	*	*	n/a	*

Other than Bulgaria in which the NRA concluded that there was effective competition in the market and therefore that it was withdrawing all remedies that had been imposed in the previous market review, there was a lot of consistency in the high level approach taken by NRAs to ensure a level playing field in the WHQAFL market. All NRAs had imposed a general non-discrimination obligation and some form of equivalence obligations on the SMP operator. No NRA had imposed functional separation although in Italy, the UK, Serbia and the Czech Republic, the SMP operator had undertaken a voluntary separation.

Regarding BP9 (the clarification of non-discrimination obligations on a case by case basis), NRAs in the Czech Republic, Poland and Lithuania had not had to deal with any cases that required further clarification through either SMP obligations or in dispute resolution cases. In the UK, Serbia and Spain, additional explanatory guidance was provided by NRAs. In the UK, Ofcom published additional guidelines about discrimination and it also published guidance during its market review about particular issues such as term discounts, volume pricing and geographic discounts and about their compatibility with non-discrimination guidelines. In both Serbia and Spain, the NRA provided additional guidance through dispute resolutions.

Although all NRAs imposed some type of equivalence, there was some variation in the types of equivalence that were applied. EoO was applied by the NRAs in the Czech Republic, Poland, and Spain (the non-discrimination obligation in Spain was drafted in broad terms and did not assess in depth whether it constituted EoI or EoO).

. It was felt that this form of equivalence was appropriate due to the regulated wholesale product sharing some but not all infrastructure and processes with the SMP operator's products. In Lithuania, a hybrid model was imposed in which both EoI and EoO were imposed according to national circumstances. In the UK, both EoI and EoO were applied on a product by product basis. Ofcom imposed EoO in relation to costing of legacy traditional interface wholesale leased lines (WLL) services (time division multiplex (TDM) circuits) because the SMP operator does not purchase wholesale traditional interface terminating segments in the same manner as other operators. Ofcom imposed EoI for newer generation of products, e.g. the wholesale markets for contemporary interface terminating segments, encompassing mainly Ethernet and wavelength division multiplex (WDM) services.

5. Competition objective 4: Avoidance of unjustified first mover advantage

5.1. Background

This BEREC Common Position refers to the competition issues of SMP operators having an incentive to:

- discriminate in favour of their own downstream arms (and thereby having an unjustified first mover advantage in downstream markets);
- the risk of SMP operators commissioning new infrastructure that alternative operators are not able to use (and thereby not allowing all market players the same opportunity to compete for new business in downstream markets);
- SMP operators denying access to information relevant for other operators roll-out of NGA.

The competition issues identified by BEREC are addressed by Best Practices 21-25 in the WLA Common Position; Best Practices 15-20 in the WCA Common Position; and Best Practices 12-15 in the WHQAFL Common Position.

5.2. Analysis by best practice

5.2.1. WLA market

Since we collected data for the Phase 2 Report the WLA market has been reviewed by 8 NRAs ('the WLA participants'). In Romania, regulation has been withdrawn from the WLA market as there were no competition concerns at the retail level that could have justified maintaining or imposing additional regulation at wholesale or retail levels. The response from Serbia was incomplete and clarification on responses to some questions is outstanding.

Table 13 summarises the best practice remedies that have been imposed for each of the WLA participants.

Table 13: Best practice remedies imposed by WLA participants

	Czech Rep.	Germany	Lithuania	Denmark	Italy	Spain	Romania	Serbia
BP21: downstream technical and economic replicability	✓	[✓]	✓	✓	✓	✓	n/a	*
BP22: timely information on lead times for new products	✓	✓	✓	✓	✓	✓	n/a	*
BP23: competitor ability to influence new SMP products	✓	✓	*	✓	✓	✓	n/a	n/a
BP24: lead times for removal of legacy products	✓	*	✓	✓	✓	✓	n/a	n/a

BP25 (a): timely and ND NGA network information	✓	✓	✓	✓	✓	✓	n/a	n/a
BP25 (b): periodic update of NGA information	✗	✓	✗	✗	✓	✓	n/a	n/a

In relation to BP 21, the German NRA put in place a regulatory measure which ensures the economic replicability of the new downstream services whereas for technical replicability, the NRA requires a modified Reference Offer when launching new products. The methodology or principles applied to ensure economic replicability are made public beforehand. The Lithuanian NRA did not make public any methodology or principles applied to ensure economic replicability beforehand because the test of economic replicability is carried out on a case-by-case basis at the time when the remedies are implemented.

In Italy, the NRA can order the SMP operator not to offer the retail product if it fails the replicability test and the SMP operator must then propose a new retail offer which takes into account AGCOM's comments.

The Serbian NRA did not put in place a regulatory regime which ensures technical or economic replicability and also did not make public the methodology or principles applied to ensure economic replicability. No obligation was imposed on the SMP operator in cases where replicability cannot be achieved using available wholesale products.

In relation to BP 22 (timely information on lead times for new products), the Serbian NRA also did not impose an obligation, but SMP operators are required to provide information about prices, terms and conditions and technical characteristics of new wholesale products. In contrast, the Czech NRA imposes detailed timetables for implementation following consultation with the NRA with ideal lead times of about 9 months.

In relation to BP 23 (competitor ability to influence new SMP products), the Lithuanian NRA did not ensure that alternative operators have the ability to influence the decisions regarding characteristics of new wholesale products and new interfaces. However, it stated that the characteristics of new wholesale products should enable replication of retail offers and alternative operators may submit complaints regarding the wholesale products of the SMP operator.

In relation to BP 24 (lead times for removal of legacy products), the German NRA did not impose a requirement on the SMP operator concerning the lead times for the removal of existing wholesale inputs as there were no relevant cases.

In relation to BP 25(b) (periodic update of NGA information), the Czech, Lithuanian and Danish NRAs did not require the information on the SMP operator's newly rolled-out NGA network to be periodically updated, because it was not considered necessary. The information about any newly rolled-out NGA network has to be made available well in advance by the SMP operator.

The Lithuanian NRA did not consider it necessary to require specific information on the SMP operator's newly rolled-out NGA network to be made available. It considers that all information regarding services is included in the Reference Offer. Should an access seeker require access, it makes a request to the SMP operator and the SMP operator then performs a technical feasibility test for each line (for both legacy and new networks). As this will provide all the necessary information on whether it is possible to provide access, there is no requirement for

the information to be made available on a non-discriminatory basis nor to be periodically updated.

5.2.2. WCA market

Since we collected data for the Phase 2 Report, the WCA market has been reviewed by 7 NRAs ('the WCA participants'). In Romania, the market for WCA was never regulated and the retail market for broadband internet access was considered to be competitive without regulation of the wholesale market. The Romania NRA therefore found that ex-ante regulation was not justified.

Table 14 summarises the best practice remedies that have been imposed for each of the WCA participants.

Table 14: Best practice remedies imposed by WCA participants

	Czech Rep.	Germany	Lithuania	Denmark	Italy	Spain	Romania
BP15: downstream technical and economic replicability	✓	[✓]	✓	✓	✓	✓	n/a
BP16: timely information on lead times for new products	✓	✓	✓	✓	✓	✓	n/a
BP17: 6-month lead time for NGA product launch	[✓]	[✓]	✓	[✓]	[✓]	[✓]	n/a
BP18: competitor ability to influence new SMP products	✓	✓	x	✓	✓	✓	n/a
BP19: lead times for removal of legacy products	✓	x	✓	✓	✓	✓	n/a
BP20(a) - timely and ND NGA network information	✓	✓	✓	✓	✓	✓	n/a
BP20(b): periodic update of NGA information	x	✓	x	x	✓	✓	n/a

In relation to BP 15 (technical and economic replicability), the German NRA put in place a regulatory regime which ensures economic replicability and did not impose any specific measures to ensure technical replicability since the basic access products allow for the replication of the SMP operator's offers. The methodology / principles applied for ensuring economic replicability were made public beforehand.

In Italy, the SMP operator cannot offer the retail product if it fails either the economic and technical replicability test and would have to run another test of the product after having been modified.

The Lithuanian NRA did not make public beforehand the methodology / principles applied to ensure economic replicability. The tests for economic replicability are carried out on a case-by-case basis during the implementation of the imposed remedies.

In relation to BP 17 (lead time for information on a NGA product launch), the required lead time in the Czech Republic to provide information on a new wholesale product is three to twelve months. In Denmark, the NRA did not set a specific required lead time to provide information on a new wholesale product but the notice period for SMP operators is instead assessed on a case-by-case basis. Technical and commercial information have to be delivered in a reasonable timeframe by the SMP operator. Such a reasonable period must allow alternative operators to replicate the new downstream service.

In Germany the required notice period is provided through the reference offer approval process.

In Italy, the NRA requires the SMP operator to submit any changes to economic or technical conditions of a wholesale product prior to offering it. The notice period is 30 days after the approval of economic conditions, and 90 days after the approval of technical conditions to allow alternative operators to adapt to the new conditions.

In Spain, the SMP operator must make available the wholesale product at least one month before the retail arm of the SMP operator can offer it. Any change of the reference offer has to be get prior approval by the NRA. The SMP operator must specify the timeframes.

In relation to BP 18 (competitor ability to influence new products), the Lithuanian NRA did not ensure that alternative operators have the ability to influence the decisions regarding characteristics of new wholesale products and interfaces. However, it stated that the characteristics of new wholesale products should enable replication of retail offers and alternative operators may submit complaints regarding the wholesale products of the SMP operator.

In relation to BP 19 (lead time for the removal of legacy products), the German NRA did not impose lead times for the removal of existing wholesale inputs as there were no known cases.

In relation to BP 20(b) (periodic information of NGA information), the Czech NRA did not require the information on the SMP operator's newly rolled-out NGA network to be periodically updated. The SMP operator does have to provide an update when it is rolling out the NGA network.

Furthermore, DBA has imposed the SMP operator to give additional information about available capacity. Additionally, the SMP operator is obligated to provide information on which optical distribution points that are located within 30 meters of the premises of the end-user which is related to the access obligation regarding fibre.

In Denmark it was not considered necessary for the information on the SMP operator's newly rolled out NGA network to be periodically updated. Instead the SMP operator is obliged to provide updated information on an ongoing basis in conformity with the information listed in DBA's response to BP20 – e.g. the SMP operator is obliged to give information about which fibre lines are located within 30 meters of the premises of the end-user and the SMP operator's optical distribution points such that they are ready to deliver broadband access.

As for the WLA market, the Lithuania NRA also did not require the SMP operator to periodically update the information on newly rolled-out NGA network as it considers all the necessary information regarding services is included in the Reference Offer.

5.2.3. WHQAFL market

Since we collected data for the Phase2 Report, the WHQAFL market has been reviewed by 7 NRAs (‘the WHQAFL participants’). In Bulgaria, the NRA concluded that there was effective competition and therefore it has proposed to withdraw all remedies that had been imposed in its previous market notification. The response from Serbia and clarification on some responses is outstanding.

Table 15 summarises the best practice remedies that have been imposed for each of the WHQAFL participants.

Table 15: Best practice remedies imposed by WHQAFL participants

	Czech Rep.	Lithuania	Poland	UK	Spain	Bulgaria	Serbia
BP12: downstream technical and economic replicability	x	✓	x	✓	✓	n/a	✓
BP13: timely information on lead times for new products	[✓]	✓	x	✓	x	n/a	✓
BP14: competitor ability to influence new SMP products	x	x	x	[✓]	✓	n/a	
BP15: lead times for removal of legacy products	x	✓	✓	✓	✓	n/a	✓

In relation to BP 12 (economic and technical replicability), the Czech NRA did not put in place a regime which ensures the technical and economic replicability of the new downstream services introduced by the SMP operator. Offers for WHQAFL are normally offered on a bespoke basis by the SMP operator, so there may be no demand for standard downstream services. The NRA also did not impose any obligation on the SMP operator in those cases where replicability cannot be achieved by using the available wholesale products, because there were no such cases. The Polish NRA also did not put in place a regulatory regime to ensure technical and economic replicability, because it was not considered necessary. Since regulation is limited to lines up to 2 Mbps, the purpose of this regulation is to serve clients using wholesale access to lines up to 2 Mbps, not new services that are developed on higher speed lines, where competition exists. In these circumstances (no first mover advantage in relation to new services), it was not considered necessary to impose restrictive obligations. This was also justified by the presence of a non-discrimination obligation, together with EoO and KPI monitoring.

The Lithuanian NRA did not make public beforehand the methodology / principles applied to ensure economic replicability as the tests are applied on a case-by-case basis when the remedies are implemented.

In Serbia the SMP operator does not have to ensure replicability when it cannot be achieved by using the available wholesale products.

In relation to BP 13 (timely information on lead times), the Czech NRA did not impose an obligation on the SMP operator regarding the timely availability of relevant information according to lead times defined on a case-by-case basis, because there is a general obligation included in the reference offer. All necessary information is published in the reference offer.

In Poland, the SMP operator is required to fulfil a 'Time-To-Market' procedure, which is independent from the SMP decision.

In Spain, the SMP operator puts in place lead times, which are subject to prior approval by the NRA. The lead times can be modified on a case-by-case basis. The SMP operator has to provide the relevant information including procedures, SLAs and KPIs. The NRA considers the information provided by the SMP operator to allow alternative operators to effectively assess the impact on their own processes.

The Serbian NRA does not have knowledge whether the information provided allows alternative operators to effectively assess the impact on their own process.

In relation to BP 14 (competitor ability to influence new products), in the Czech Republic, the NRA has not imposed an obligation which would enable the alternative operators to have the ability to influence such decision. The definition of wholesale products is controlled by the SMP operator but in practice alternative operators do discuss new products and interfaces with the SMP operator.

The Lithuanian NRA did not ensure that alternative operators have the ability to influence the decisions regarding characteristics of new wholesale products. However, it stated that the characteristics of new wholesale products should enable replication of retail offers and alternative operators may submit complaints regarding the wholesale products of the SMP operator.

In the UK, the SMP operator must notify the alternative operators of changes in the reference offer. Such changes have to comply with the non-discrimination obligations and can only be implemented by agreement. In cases of disagreement, operators can use the formal dispute resolution process.

In relation to BP 15 (lead times for removal of legacy products), the Czech NRA did not impose a requirement on the SMP operator concerning lead times when removing existing wholesale products, as there have not been any cases. In Spain, the lead time regarding the removal of existing wholesale inputs is twelve months. In Poland it is three months. In the UK, the notice period for product withdrawal is ninety days. Longer periods were considered appropriate in some circumstances, but there have not been problems in practice.

6. Competition objective 5: Transparency

6.1. Background

This BEREC Common Position refers to the competition issues that arise if SMP operators:

- do not provide sufficient clarity or transparency on the terms and conditions of access;
- delay the provision of a Reference Offer (RO) to alternative operators;
- do not take into account the views of wholesale customers when developing the RO;

- having preferential access to key information compared to alternative operators.

The competition issues identified by BEREC are addressed by the Best Practices 26-28 in the WLA Common Position; Best Practices 21-22 in the WCA Common Position; and Best Practices 16-17 in the WHQAFL Common Position.

6.2. Analysis by best practice

6.2.1. WLA market

Since we collected data for the Phase 2 Report, the WLA market has been reviewed by 8 NRAs ('the WLA participants'). In Romania, the NRA found the market to be effectively competitive and so no operator was found to have SMP

Table 16 summarises the best practice remedies that have been imposed for each of the other WLA participants.

Table 16: Best practice remedies imposed by WLA participants

	Czech Rep.	Germany	Lithuania	Denmark	Italy	Spain	Romania	Serbia
BP26: RO publication	✓	✓	✓	✓	✓	✓	n/a	✓
BP26a: RO to reflect reasonable customer views	✓	✓	✗	✗	✓	✓	n/a	✓
BP26b: RO timely publication	✓	✓	✓	✓	✓	✓	n/a	✓
BP26c: RO timely update	✓	✗	✓	✓	✓	✓	n/a	✓
BP26d: RO minimum information	✓	✓	✓	✓	✓	✓	n/a	✓
BP26e: Contractual changes following RO obligations removal	✓	✗	✗	✗	✗	✗	n/a	n/a
BP27: timely information to all operators	✓	✓	✓	✓	✓	✓	n/a	✓
BP28: Civil infrastructure database	✗	✓	✗	✗	✓	✓	n/a	✗

All the NRA's require SMP operator(s) to provide clarity of terms and conditions of access by publishing a Reference Offer (RO).

In relation to BP26a (requirement for the RO to reflect customer views), the Lithuanian SMP operator is not required to take into account any reasonable views of wholesale customers in their RO. In Denmark, the SMP operator is also not directly required but the SMP operator has an obligation to notify alternative operators of changes to a RO. Any such changes amount to a contract variation with the alternative operators and can only be implemented by agreement. In cases of disagreement, alternative operators can use the formal disputes process. The non-

discrimination obligation also provides additional protection for alternative operators against discriminatory changes to RO terms.

All NRAs who require a RO from the SMP operator require a timely publication (BP26b) although the timing varies between NRAs. With the exception of Germany, all NRAs also require a timely update (BP26c). In Germany new access products at first are usually the object of voluntary access agreements or dispute resolution settlements. Alternatively, the NRA can request an update.

All NRAs also require a minimum amount of information (BP26d) although NRAs differ in terms of what information is required.

In relation to BP26e (contractual changes following RO obligations removal), with the exception of the Czech NRA, NRAs have not imposed a condition since they have not removed any obligations in relation to a RO.

In relation to BP27 (timely information to all operators), all NRAs imposed an obligation to make public information about KPI measurements and changes in infrastructure architecture. In Germany, the development of vectoring is also required to be made public in the future.

In Germany, Spain and Italy, the NRAs require the SMP operator to set up a civil infrastructure database containing information relating to the organisation and technical infrastructure of the civil engineering infrastructure. In Italy, the SMP operator is also required to include information on the available space in ducts.

6.2.2. WCA market

Since we collected data for the Phase 2 Report, the WCA market has been reviewed by 7 NRAs ('the WCA participants'). In Romania, the market for WCA was never regulated and the retail market for broadband internet access was considered to be competitive without regulation of the wholesale market. The Romania NRA therefore found that ex-ante regulation was not justified.

Table 17 summarises the best practice remedies that have been imposed for each of the other 6 WCA participants.

Table 17: Best practice remedies imposed by WCA participants

	Czech Rep.	Germany	Lithuania	Denmark	Italy	Spain	Romania
BP21: RO publication	✓	✓	✓	✓	✓	✓	n/a
BP21a: RO to reflect reasonable customer views	✓	✓	x	x	✓	✓	n/a
BP21b: RO timely publication	✓	✓	✓	✓	✓	✓	n/a
BP21c: RO timely update	✓	x	✓	✓	✓	✓	n/a
BP21d: RO minimum information	✓	✓	✓	✓	✓	✓	n/a
BP21e: Contractual changes following RO obligations removal	✓	x	x	x	x	✓	n/a
BP22: timely information to all operators	✓	✓	✓	✓	✓	✓	n/a

All the NRAs require SMP operator(s) to provide clarity of terms and conditions of access by publishing a Reference Offer (RO).

In relation to BP21a (RO to reflect customer views), the Lithuanian SMP operator is not required to take into account any reasonable views of wholesale customers in their RO. Similarly, the SMP operator in Denmark has no direct requirement to take customer views into account. As in the WLA market, the SMP operator in Denmark has an obligation to notify alternative operators of changes to a RO. Any such changes amount to a contract variation with the alternative operators and can only be implemented by agreement. In cases of disagreement, alternative operators can use the formal disputes process. The non-discrimination obligation also provides additional protection for alternative operators against discriminatory changes to RO terms.

All NRAs require a timely publication of the RO (BP21b) although the timing varies between NRAs. Other than in Germany, all NRAs require a timely update to the RO (BP21c). In Germany new access products are usually the object of voluntary access agreements or dispute resolution settlements. Alternatively, the NRA can request an update.

All NRAs require a minimum amount of information (BP21d) although NRAs differ on what information is required.

Regarding contractual changes following RO obligations removal (BP21e), with the exception of the Czech and Spanish NRAs, NRAs have not imposed a condition since they have not removed any obligations in relation to a RO. In Spain, CNMC stated: “when legacy BSA (bitstream access) was lifted, a transitional period and conditions to the new BSA service was defined”.

On timely information to all operators (BP22), all NRAs imposed an obligation to make public information about KPI measurements and changes in infrastructure architecture.

6.2.3. WHQAFL market

Since we collected data for the Phase 2 Report the WHQAFL market has been reviewed by 7 NRAs ('the WHQAFL participants'). In Bulgaria, the NRA concluded that there is effective competition in the market and is therefore withdrawing remedies that were imposed in the previous market review.

Table 18 summarises the best practice remedies that have been imposed for each of the other WHQAFL participants.

Table 18: Best practice remedies imposed by WHQAFL participants

	Czech Rep.	Lithuania	Poland	UK	Spain	Bulgaria	Serbia
BP16: RO publication	✓	✓	✓	✓	✓	n/a	✓
BP16a: RO to reflect reasonable customer views	✓	✗	✓	✗	✓	n/a	✓
BP16b: RO timely publication	✓	✓	✓	✓	✓	n/a	✓
BP16c: RO timely update	✗	✓	✓	✓	✓	n/a	✓
BP16d: RO minimum information	✓	✓	✓	✓	✓	n/a	✓
BP16e: Contractual changes following RO obligations removal	✓	✗	✓	✗	✓	n/a	n/a
BP17: timely information to all operators	✗	✓	✓	✓	✓	n/a	✓

All NRAs require the SMP operator(s) to provide clarity of terms and conditions of access by publishing a Reference Offer (RO).

Regarding BP16a (RO to reflect customer views), the Lithuanian SMP operator is not required to take into account any reasonable views of wholesale customers in their RO. Similarly, in the UK, the SMP operator has no direct requirement to take this into account, but the SMP operator has a regulatory obligation to notify other operators of changes to the reference offer. Any such changes amount to a contract variation with the other operators and can only be implemented by agreement. In cases of disagreement, operators can use the formal disputes process. The non-discrimination obligations also provide additional protection for operators against discriminatory changes to Reference Offer terms.

All NRAs require a timely publication of the RO (BP16b) although the timing varies between NRA's. Except in the Czech Republic, all NRAs also require a timely update (BP16c).

All NRAs require a minimum amount of information (BP16d) although there are differences in terms of what information is required.

The Polish, Spanish and the Czech NRA require the SMP operator to make provisions for the change in the contractual decisions with a transition period (BP16e). The Lithuanian NRA has never lifted an RO obligation and the UK NRA indicates that in markets where deregulation took place, it makes clear in its decision statement that as the markets have been found to be effectively competitive, the SMP operator and other CPs would need to reach satisfactory commercial agreements about changes to contractual conditions.

In relation to BP17 (timely information to all operators), all NRAs except for the Czech NRA imposed an obligation to make public information about KPI measurements and changes in infrastructure architecture.

7. Competition objective 6: Reasonable quality of access products - technical issues

7.1. Background

This BEREC Common Position refers to the competition issues that arise from SMP operators:

- restricting the usage of services in the relevant markets;
- not providing access products of reasonable quality;
- arbitrarily limiting forms of access;
- providing forms of access that are over specified.

The competition issues identified by BEREC are addressed by the Best Practices 29-31 in the WLA Common Position; Best Practices 23-24 in the WCA Common Position; and Best Practices 18-21 in the WHQAFI Common Position.

7.2. Analysis by best practice

7.2.1. WLA market

Since we collected data for the Phase 2 Report the WLA market has been reviewed by 8 NRAs ('the WLA participants'). In Romania, the NRA found the market to be effectively competitive and so no operator was found to have SMP. The response from Serbia requires clarification on some responses and this is outstanding.

Table 19 summarises the best practice remedies that have been imposed for each of the other WLA participants

Table 19: Best practice remedies imposed by WLA participants

	Czech Rep.	Germany	Lithuania	Denmark	Italy	Spain	Romania	Serbia
BP29(i): RO publication and requirement to meet all reasonable requests	[✓]	✓	✓	✓	✓	✓	n/a	✓
BP29(ii): RO reviewed?	✓	✓	✓	✓	✓	✓	n/a	
BP30: Detailed information on access products	✓	✓	✓	✓	✓	✓	n/a	✗
BP31: rules on prevention of signal interference	✓	✓	✗	✓	✓	✓	n/a	

In relation to BP29(i) (RO publication and requirement to meet all reasonable requests), in the Czech Republic, the publication of a RO is mandated by the law, not by the NRA. CTU, the Czech NRA, evaluates every published RO and maintains the right to change it if it is not in compliance with imposed obligations although in practice, it communicates its objections to the SMP operator for effective redress. Other than in Serbia, NRAs review the RO whenever changes occur in the market or in the RO. In Spain, the NRA can also review the RO on the request of an OLO. In Italy, there's a national public consultation each year after the publication of the RO and every change on the RO has to be approved by the NRA.

In relation to BP31 (rules on prevention of signal interference), In Lithuania, the NRA has determined that there is no need to have rules on prevention of signal interference as there is no VDSL. Other NRAs require that rules on prevention of signal interference are in place.

7.2.2. WCA market

Since we collected data for the Phase 2 Report the WCA market has been reviewed by 7 NRAs ('the WCA participants'). In Romania, the market for WCA was never regulated and the retail market for broadband internet access was considered to be competitive without regulation of the wholesale market. The Romania NRA therefore found that ex-ante regulation was not justified.

Table 20 summarises the best practice remedies that have been imposed for each of the other WCA participants.

Table 20: Best practice remedies imposed by WCA participants

	Czech Rep.	Germany	Lithuania	Denmark	Italy	Spain	Romania
BP23: RO publication and requirement to meet all reasonable requests	[✓]	✓	✓	✓	✓	✓	n/a

BP23: RO Reviewed?	✓	✓	✓	✓	✓	✓	n/a
BP24: Detailed information on access products	x	✓	x	✓	✓	✓	n/a

In relation to BP24 (detailed information on access products), NRAs from the Czech Republic and Lithuania do not impose any technical characteristics on access products.

7.2.3. WHQAFL market

Since we collected data for the Phase 2 Report, the WHQAFL market has been reviewed by 7 NRAs ('the WHQAFL participants'). In Bulgaria, the NRA concluded that there is effective competition in the market and is therefore withdrawing remedies that were imposed in the previous market review. The response from Serbia is awaiting clarification on some responses.

Table 21 summarises the best practice remedies that have been imposed for each of the other WHQAFL participants.

Table 21: Best practice remedies imposed by WHQAFL participants

	Czech Rep.	Lithuania	Poland	UK	Spain	Bulgaria	Serbia
BP18: RO to include relevant technical information	✓	✓	✓	✓	✓	n/a	✓
BP19: standards adherence	✓	x	✓	✓	✓	n/a	✓
BP20: wide availability of leased line interconnection points	✓	✓	✓	✓	✓	n/a	
BP21: end to end leased lines where interconnection not feasible or economic (exc trunk)	✓	x	✓	✓	✓	n/a	

In relation to BP19 (standards adherence), all NRAs except that of Lithuania encourage the SMP operator to adhere to European or global technical standards. The Lithuanian NRA states that it supports adherence to the standards, but this is a matter of choice for the SMP operator. In the UK, all operators, not just the SMP operator, are subject to an obligation in accordance with Article 17 of the Framework Directive which states that if the standards and/or specifications published by the European Commission in the Official Journal of the European Communities have not been adequately implemented so that interoperability of services in one or more Member States cannot be ensured, the implementation of such standards and/or specifications may be made compulsory.

In relation to BP21 (ensuring end to end leased line are available throughout the geographical market), the Lithuanian NRA did not impose such an obligation for end to end connectivity. However, RRT does impose obligations on the SMP operator to provide a connection between its terminating segments and the alternative operator's trunk network, including cases when these segments are geographically remote (e.g. rural areas).

8. Competition objective 7: Reasonable quality of access products – operational aspects

8.1. Background

This BEREC Common Position refers to the competition issue arising from SMP operators having an incentive to discriminate in favour of their own downstream operations in relation to the quality of wholesale access products.

The competition issues identified by BEREC are addressed by the Best Practices 32-34 in the WLA Common Position; Best Practices 25-27 in the WCA Common Position; and Best Practices 22-24 in the WHQAFL Common Position.

8.2. Analysis by best practice

8.2.1. WLA market

Since we collected data for the Phase 2 Report the WLA market has been reviewed by 8 NRAs ('the WLA participants'). In Romania, the NRA found the market to be effectively competitive and so no operator was found to have SMP. The response from Serbia is awaiting clarification on some responses.

Table 22 summarises the best practice remedies that have been imposed for each of the other WLA participants.

Table 22: Best practice remedies imposed by WLA participants

	Czech Rep.	Denmark	Lithuania	Denmark	Italy	Spain	Romania	Serbia
BP32: reasonable QoS	✓	✓	✓	✓	✓	✓	n/a	✓
BP32a: SLAs for specific areas	✓	✓	✓	✓	✓	✓	n/a	✓
BP32b: SLAs available to wholesale operators	✓	✓	✓	✓	✓	✓	n/a	✓
BP32c: NRA SLA oversight	✓	✓	✗	[✓]	✓	✓	n/a	✗
BP32d: SLAs to reflect customer differences	✓	✗	✓	✗	✓	✓	n/a	
BP33: SLG requirement	✓	[✓]	✓	✓	✓	✓	n/a	✓
BP33a: SLGs to cover specific areas	✓	✓	✓	✓	✓	✓	n/a	✓
BP33b: SLG payments without delay	✓	✓	✓	✓	✓	✓	n/a	✓
BP33c: NRA oversight of SLGs	✓	✓	✗	[✓]	✓	✓	n/a	
BP33d: SLGs available to all wholesale operators	✓	✓	✓	✓	✓	✓	n/a	✓

	Czech Rep.	Denmark	Lithuania	Denmark	Italy	Spain	Romania	Serbia
BP34: Generic KPI requirement	✓	✓	✓	✓	✓	✓	n/a	✓
BP34a: KPIs to cover specific areas	✓	✓	✓	✓	✓	✓	n/a	✓
BP34b: KPIs available to all operators	x	✓	✓	✓	✓	✓	n/a	

All NRAs mandate SLAs for specific operational service areas such as ordering and maintenance (BP32a), and in Denmark and Germany, there are also SLAs about the switching between different regulated access products.

In relation to the setting of SLAs (BP32c), SLGs (BP33c) and KPIs (BP34cBP34c), all NRAs except the Lithuanian and Serbian NRA oversee the process of setting SLAs, SLGs and KPIs. In Germany, Spain and Italy, SLAs and SLGs are included in the RO that has to be approved by the NRA. In Germany and Spain, KPIs are also included in the RO, and so are subject to approval from their NRAs. In Italy, KPIs and KPOs (key performance objectives) are set by the incumbent together with the NRA. In the Czech Republic, the NRA sets the basic principles of SLAs/SLGs and KPIs and verifies the compliance with these basic principles.

In Denmark, the SMP operator has an obligation to take active part in meetings with alternative operators so that alternative operators can have an influence on ongoing issues including SLAs, SLGs and KPIs which have to be included in the SMP operator's RO. These meetings are supervised by the NRA.

The Lithuanian and Serbian NRA do not oversee the process of setting SLAs/SLGs and KPIs since the market circumstances have not given rise to particular concerns about discriminatory behaviour.

Regarding SLAs to reflect customer differences (BP32d), in Denmark and Germany, there is no demand for differentiated SLAs to reflect customer differences. In Germany, there are high quality offers and the SLAs reflect the types of offers but all quality levels are available to residential and business customers.

In relation to BP34b (KPIs available to all operators), other than in the Czech Republic, and Serbia, all NRAs mandate KPIs to be available to all authorised operators (systematically or on request). In the Czech Republic, only aggregated values are available and operators can compare KPIs to the industry average.

8.2.2. WCA market

Since we collected data for the Phase 2 Report, the WCA market has been reviewed by 7 NRAs ('the WCA participants'). In Romania, the market for WCA was never regulated and the retail market for broadband internet access was considered to be competitive without

regulation of the wholesale market. The Romania NRA therefore found that ex-ante regulation was not justified.

Table 23 summarises the best practice remedies that have been imposed for each of the other WCA participants.

Table 23: Best practice remedies imposed by WCA participants

	Czech Rep.	Germany	Lithuania	Denmark	Italy	Spain	Romania
BP25: reasonable QoS	✓	✓	✓	✓	✓	✓	n/a
BP25a: SLAs for specific areas	✓	✓	✓	✓	✓	✓	n/a
BP25b: SLAs available to wholesale operators	✓	✓	✓	✓	✓	✓	n/a
BP25c: NRA SLA oversight	✓	✓	✗	[✓]	✓	✓	n/a
BP25d: SLAs to reflect customer differences	✗	✗	✓	✗	✓	✓	n/a
BP26: SLG requirement	✓	✗✓	✓	✓	✓	✓	n/a
BP26a: SLGs to cover specific areas	✓	✓	✓	✓	✓	✓	n/a
BP26b: SLG payments without delay	✓	✓	✓	✓	✓	✓	n/a
BP26c: NRA oversight of SLGs	✓	✓	✗	[✓]	✓	✓	n/a
BP26d: SLGs available to all wholesale operators	✓	✓	✓	✓	✓	✓	n/a
BP27: Generic KPI requirement	✓	✓	✓	✓	✓	✓	n/a
BP27a: KPIs to cover specific areas	✓	✓	✓	✓	✓	✓	n/a
BP27b: KPIs available to all operators	✗	✓	✓	✓	✓	✓	n/a
BP27c: NRA oversight of KPI setting	✓	✓	✗	[✓]	✓	✓	n/a

In relation to the setting of SLAs (BP25c), SLGs (BP26c) and KPIs (BP27c), all NRAs except the Lithuanian NRA oversee the process of setting SLAs SLGs and KPIs. In Germany, Spain and Italy, SLAs and SLGs are included in the RO that has to be approved by the NRA. In Germany and Spain, KPIs are also included in the RO and are therefore subject to NRA approval. In Italy, KPIs are set by the incumbent together with the NRA. In the Czech Republic, the NRA sets the basic principles of SLAs/SLGs and KPIs and verifies the compliance with these basic principles.

In Denmark, there are meetings between the SMP operator and alternative operators so that alternative operators can have an influence on ongoing issues including SLAs, SLGs and KPIs. These meetings are supervised by the NRA.

The Lithuanian NRA does not oversee the process of setting SLAs/SLGs and KPIs since the market circumstances have not given rise to particular concerns about discriminatory behaviour.

In relation to BP25d (SLAs to reflect customer differences), in Denmark and Germany, there is no demand for differentiated SLAs to reflect the customer differences. In Germany, all quality levels are available to private as well as business customers.

In relation to BP26 (generic requirement to provide SLGs), all NRAs set such requirements, except for the German NRA, which explained that SLGs are laid down in the reference offer.

In relation to BP27b (KPIs available to all operators), all NRAs except from the Czech Republic mandate KPIs to be available to all authorised operators (systematically or on request). In the Czech Republic, only aggregated values are available and operators can compare KPIs to the industry average.

8.2.3. WHQAFL market

Since we collected data for the Phase 2 Report, the WHQAFL market has been reviewed by 7 NRAs ('the WHQAFL participants'). In Bulgaria, the NRA concluded that there is effective competition in the market and is therefore withdrawing remedies that were imposed in the previous market review. The response from Serbia was incomplete and is awaiting clarification on some responses. Table 24 summarises the best practice remedies that have been imposed for each of the other WHQAFL participants.

Table 24: Best practice remedies imposed by WHQAFL participants

	Czech Rep.	Lithuania	Poland	UK	Spain	Bulgaria	Serbia
BP22: reasonable QoS	✓	✓	✓	✓	✓	n/a	✓
BP22a: SLAs for specific areas	n/a	✓	✓	✓	✓	n/a	✓
BP22b: SLAs available to wholesale operators	n/a	✓	✓	✓	✓	n/a	✓
BP22c: NRA SLA oversight	n/a	✗	✓	✓	✓	n/a	
BP22d: SLAs to reflect customer differences	n/a	✗	✗	✗	n/a	n/a	
BP23: SLG requirement	✗	✓	✓	✓	✓	n/a	✓
BP23a: SLGs to cover specific areas	n/a	✓	✓		✓		✓

	Czech Rep.	Lithuania	Poland	UK	Spain	Bulgaria	Serbia
BP23b: SLG payments without delay	n/a	✓	✓		✓		✓
BP23c: NRA oversight of SLGs	n/a	✗	✓		✓		
BP23d: SLGs available to all wholesale operators	n/a	✓	✓		✓		✓
BP24: Generic KPI requirement	✗	[✓]	✓		[✓]		n/a
BP24a: KPIs to cover specific areas	n/a	✓	✓		✓		n/a
BP24b: KPIs available to all	n/a	✗	✓		✓		n/a
BP24c: NRA oversight of KPI setting	n/a	✗	✓		✓		

In relation to the requirement to provide SLAs/SLGs (BP22, BP23), all NRAs except for the Czech Republic impose a requirement to provide SLAs/SLGs. In the Czech Republic only a general non-discrimination obligation is imposed since the market circumstances did not cause particular concerns and there were no disputes arising regarding these matters.

In relation to BP22d (SLAs to reflect customer differences), none of the NRAs require the SLAs to reflect customer differences since the market circumstances do not justify such a distinction.

In relation to the setting of SLAs (BP22c) SLGs (BP23c) and KPIs (BP24c), NRAs from the UK, Poland and Spain oversee the process of setting SLAs/SLGs through the approval of the RO (Poland and Spain) or by setting basic principles (UK). In Spain, KPIs are also included in the RO while in Poland they are the result of a public consultation. The UK NRA imposes KPIs for contemporary interface services while the setting of KPIs for traditional interface services has been done through an industry agreement.

In the Czech Republic there are no requirements for SLAs/SLGs and these have not proved necessary as there were no disputes regarding the SLA/SLG that the SMP operator provides on a commercial basis in the absence of any obligations. The Lithuanian and Serbian NRAs do not oversee the process of setting SLAs/SLGs and KPIs since the market circumstances did not cause particular concerns.

In relation to BP24 (setting KPIs), in Lithuania, Spain and the Czech Republic, NRAs do not impose a requirement to provide KPIs since the market circumstances do not cause particular concerns (Czech Republic) or since there is evidence that it is unnecessary or would not be cost effective.

In relation to BP24b (KPIs available to all), the UK NRA mandates KPIs that relate to individual communications providers to be available only to those communications providers.

9. Competition objective 8: Assurance of efficient and convenient wholesale switching

9.1. Background

This BEREC Common Position identifies the competition issue of SMP operators having an incentive to discriminate in favour of their own downstream operations which may result in wholesale customers being unable to switch wholesale products and/or wholesale providers without minimum delay or disruption.

The competition issues identified by BEREC are addressed by the Best Practice 35 in the WLA Common Position; Best Practice 28 in the WCA Common Position; and Best Practice 25 in the WHQAFL Common Position.

9.2. Analysis by best practice

9.2.1. WLA market

Since we collected data for the Phase 2 Report, the WLA market has been reviewed by 8 NRAs ('the WLA participants'). In Romania, the NRA found the market to be effectively competitive and so no operator was found to have SMP. The response from Serbia was incomplete and is awaiting completion.

Table 25 summarises the best practice remedies that have been imposed for each of the other WLA participants.

Table 25: Best practice remedies imposed by WLA participants

	Czech Rep.	Germany	Lithuania	Denmark	Italy	Spain	Romania	Serbia
BP35: wholesale switching processes	✓	✓	✓	✓	✓	✓	n/a	
BP35a: minimum downtime during switching	✓	✓	✓	✓	✓	✓	n/a	
BP35b: price of switching not a barrier	✓	✓	✓	✓	✓	✓	n/a	
BP35c: bulk switching processes	✗	✗	✗	✓	✗	✓	n/a	
BP35d: low switching transaction time	✓	✓	✓	✓	✓	✓	n/a	
BP35e: switching SLAs / SLGs / KPIs	✓	✓	✗	✓	✓	✓	n/a	

All WLA participants imposed an obligation to ensure efficient switching between operators (BP 35). In order to ensure wholesale switching processes, in Spain, the NRA has defined wholesale switching from one service to another in the corresponding RO for the target service, a specific procedure in the RO which includes coordination with number portability and a bitstream/LLU switching procedure.

Respondents have all set minimum downtime during switching (BP35a). In particular, in Spain the NRA requires the switching time frame to be limited to 6 hours (coordinated with the number portability frame). All the works must be performed in a coordinated manner within those 6 hours. In Germany, the minimum downtime during switching is equal for all customers.

With regard to the price of switching (BP35b), all respondents answered that the NRA requires that price does not act as a barrier to wholesale switching. In Spain, the NRA stated that the price of switching is cost oriented.

In Spain and Denmark, the NRAs imposed an obligation to facilitate bulk switching processes (BP 35c). Moreover, in Spain, the RO defines bulk migrations for those types of switching processes to be performed at the same MDF and which do not require work at customers' premises; minimum and maximum order sizes are defined (with a minimum order size of 2-15 depending on the specific product types and a maximum order size of 50) - lead times are the same as for individual orders although the bulk migration price takes into account the savings associated with performing the activities in bulk. In Denmark, regulatory measures for bulk switching processes are identical to those for individual orders. The other NRAs (Czech, Italian, German and Lithuanian) do not find the need to put in place specific measures regarding bulk wholesale switching processes. All respondents require low switching transaction times (BP35d), while most NRAs introduced switching SLAs / SLGs and KPIs to ensure the efficiency of the switching process (BP35e), e.g. in Spain, switching to NEBA (enhanced bitstream service) from legacy bitstream services (ADSL-IP) has an SLA of 6 days for each individual request (not an average), and a maximum interruption time of 60 minutes (SLGs are defined in case the values are not fulfilled). In Lithuania, the NRA considers that such measures are not necessary.

9.2.2. WCA market

Since we collected data for the Phase 2 Report, the WCA market has been reviewed by 7 NRAs ('the WCA participants'). In Romania, the market for WCA was never regulated and the retail market for broadband internet access was considered to be competitive without regulation of the wholesale market. The Romania NRA therefore found that ex-ante regulation was not justified.

Table 26 summarises the best practice remedies that have been imposed for each of the other WCA participants.

Table 26: Best practice remedies imposed by WCA participants

	Czech Rep.	Germany	Lithuania	Denmark	Italy	Spain	Romania
BP28: wholesale switching processes	✓	✓	✓	✓	✓	✓	n/a
BP28a: minimum downtime during switching	✓	✓	✓	✓	✓	✓	n/a
BP28b: price of switching not a barrier	✓	✓	✓	✓	✓	✓	n/a

	Czech Rep.	Germany	Lithuania	Denmark	Italy	Spain	Romania
BP28c: bulk switching processes	✓	✗	✗	✓	✓	✓	n/a
BP28d: low switching transaction time	✓	✓	✓	✓	✓	✓	n/a
BP28e: switching SLAs/SLGs / KPIs	✓	✓	✗	✓	✓	✓	n/a

WCA participants imposed obligations to ensure efficient switching between operators (BP 28). In particular, in Spain, the NRA has defined a specific procedure in the RO which includes coordination with number portability.

All respondents require a minimum downtime during switching for different wholesale customer segments (BP28a). Respondents also require that price of switching does not act as a barrier to wholesale switching (BP28b). In Germany minimum downtime during switching is equal for all customers and there is no lower grade switching process for non-business customers.

With regard to bulk switching processes (BP 28c), all respondents, except for the Lithuanian and German NRAs, require specific measures to facilitate bulk wholesale switching processes and ensure these are non-discriminatory. In Spain, details of bulk wholesale switching processes are included within the RO. In the Czech Republic, the SMP operator has to facilitate bulk wholesale switching processes with no unnecessary delay and the price should be cost oriented. In Denmark, measures are identical for bulk switching processes to those for individual orders. With respect to bitstream services, the Italian NRA has set specific measures related to bulk migration procedures between the ATM and Ethernet bitstream platform.

All respondents require low switching transaction time (BP 28d). Most NRAs introduced switching SLAs / SLGs and KPIs to ensure the efficiency of the switching process (BP28e) except in Lithuania where such a measure was not deemed necessary because these are deemed to be unnecessary and not cost-effective.

9.2.3. WHQAFL market

Since we collected data for the Phase 2 Report, the WHQAFL market has been reviewed by 7 NRAs ('the WHQAFL participants'). In Bulgaria, the NRA concluded that there is effective competition in the market and is therefore withdrawing remedies that were imposed in the previous market review. The response from Serbia was incomplete and is awaiting clarification.

Table 27 summarises the best practice remedies that have been imposed for each of the other WHQAFL participants.

Table 27: Best practice remedies imposed by WHQAFL participants

	Czech Rep.	Lithuania	Poland	UK	Spain	Bulgaria	Serbia
BP25: wholesale switching processes	x	✓	✓	x	✓	n/a	
BP25a: minimum downtime during switching	x	✓	x	x	x	n/a	
BP25b: price of switching not a barrier	x	✓	✓	✓	✓	n/a	
BP25c: bulk switching processes	x	[✓]	x	x	x	n/a	
BP25d: low switching transaction time	x	✓	x	x	✓	n/a	
BP25e: switching SLAs/SLGs/KPIs	x	x	n/a	x	x	n/a	

Measures concerning wholesale switching processes in the WHQAFL market have been imposed in Lithuania, Poland and Spain (BP25).

In Spain, general migration between products is not required to be fully specified since leased line products in the business market often require a case by case requirements analysis. The NRA defines the migration procedure and prices in the RO and the RO includes general obligations to reach agreement between parties for the migration of services.

The Czech NRA has not imposed switching process measures as no market problem has been identified. In the UK, the NRA stated that there have not been any particular concerns about arrangements for end-users to switch wholesale leased lines (WLLs) between communications providers. When switching takes place, new circuits are generally provided alongside the old ones and tested so that service outages can be minimised. Moreover, switching often takes place as part of a wider upgrade to the end-users' services and applications so like-for-like switching of individual circuits does not take place. Minimum downtime for switching obligations has been imposed only by the Lithuania NRA (BP25a). In Spain, migration between leased lines services intended for the business segment are not detailed in the RO although some parameters are included in the reference offer with detailed procedures and times. In Poland, the NRA stated that there was not a need for such differentiation as this is covered in the RO and consequently there was no need to specify SLAs/SLGs.

Respondents also require that the price of switching does not act as a barrier to wholesale switching (BP25b). In the UK, prices for connections and migrations are subject to the charge controls, while in Spain, migration conditions generally are not detailed in the RO but are subject to agreement - the NRA would intervene in case of a complaint.

In relation to measures to facilitate bulk wholesale switching (BP25c), in Lithuania, the NRA specified that, in conformity with the BP, such measures are not considered necessary. In the UK they were also not considered necessary and there had not been any particular concerns

about arrangements for end-users to switch wholesale leased lines between communications providers. Generally, when switching takes place, new circuits are provided alongside the old ones and tested so that service outages can be minimised. Moreover, switching often takes place as part of a wider upgrade to the end-users' services and applications so like-for-like switching of individual circuits does not take place. In Poland they were also not considered necessary, since a non-discrimination obligation is imposed on the SMP operator and these obligations extends to all of its activities.

With regard to low switching transaction time (BP25d), NRAs in the Lithuania and Spain have imposed regulatory measures. In Spain, the obligation applies only for some products and only for migrating some parameters/characteristics. In Poland, the measure is not imposed, but there is a non-discrimination obligation in place.

None of the respondents introduced switching SLAs / SLGs and KPIs to ensure the efficiency of the switching process (BP25e).

10. Competition objective 9: Assurance of efficient migration processes from legacy to NGN/NGA network

10.1. Background

This BEREC Common Position identified the competition issue of SMP operators not providing migration procedures from legacy to NGN/NGA networks that enable competitors to provide retail services based on the new network to compete with the SMP operator.

The competition issues identified by BEREC are addressed by the Best Practices 36-40 in the WLA Common Position; Best Practices 29-33 in the WCA Common Position; and Best Practices 26-29 in the WHQAFL Common Position.

10.2. Analysis by best practice

10.2.1. WLA market

Since we collected data for the Phase 2 Report, the WLA market has been reviewed by 8 NRAs ('the WLA participants'). In Romania, the NRA found the market to be effectively competitive and so no operator was found to have SMP. The response from Serbia was incomplete and is awaiting clarification.

Table 28 summarises the best practice remedies that have been imposed for each of the WLA participants.

Table 28: Best practice remedies imposed by WLA participants

	Czech Rep.	Germany	Lithuania	Denmark	Italy	Spain	Romania	Serbia
BP36: switching processes apply equally to NGN/NGA	✓	✓	✓	✓	✓	✓	n/a	
BP37: migration framework for legacy network decommissioning	✓ x	n/a	✓ x	✓ x	✓ x	✓	n/a	
BP38: existing obligations only removed when migration agreed and finished	✓	n/a	✓	✓	x	✓	n/a	
BP39: Notice periods for legacy networks to reflect various factors	✓	n/a	x	✓	✓ x	✓	n/a	
BP40: MDF decommissioning of 5 years	x	n/a	x	✓	✓	✓	n/a	

In relation to the migration framework for legacy network decommissioning (BP37), the German NRA stated that no decommissioning will take place in the foreseeable future. The NRAs in the Czech Republic, Lithuania, Italy and Denmark NRAs imposed a subset of regulatory measures related to a notice period and the provision of relevant information on network modification.

In relation to removing existing obligations when migrations have been agreed and finished (BP38), NRAs in Germany and Lithuania stated that this BP is not applicable. In Germany, the NRA explained that no decommissioning will take place in the foreseeable future, so there are no transitional provisions in place. In the Czech Republic and Denmark, NRAs require that existing obligations remain in place during the migration process. In contrast, in Italy, the NRA did not find the need to define any obligation in its market review but a specific proceeding is ongoing regarding defining regulatory conditions for migration.

In Spain, the NRA requires that existing obligations remain in place during the notice periods, after which the SMP operator must still ensure continuance of the wholesale services for a period of up to six months, while migration to other access alternatives takes place. During this additional six-month period, the SMP provider is not required to grant new requests for access but must ensure provisioning of the wholesale access services that were already available. Migration to other forms of access can take place during the notice period (to an own network, or to other regulated offers, which contain predefined migration paths from LLU to bitstream if available, for example) or during an additional period of six months, in which the MDF is already closed, i.e., no additional LLU is allowed (including for the incumbent), but existing LLU lines are maintained until they are migrated.

Regarding notice periods for legacy networks to reflect various factors (BP39), in Germany, the NRA did not impose an obligation relating to a notice period for phasing out legacy networks, so the BP was not applicable. When setting an obligation for a notice period for phasing out legacy networks, the Czech NRA takes into account the availability of a fully-

fledged alternative and whether a reasonable NGA access product will be available at the same location, and in general, the notice period is likely to be longer when phasing out a location than when phasing out a product as a new access product is often available at the same location. The Lithuanian NRA indicates that the length of the notice period was determined in the national Rules for Delivery and Provision of Access, depending on the availability of an alternative product in the same geographical location. The same approach applied in Denmark. In Italy, the length of the notice period depends on the availability of a fully-fledged alternative. In Spain, the NRA takes into account, apart from the factors listed, the investment and the existence of wholesale inputs.

In relation to MDF decommissioning (BP40), in Germany, the NRA stated that this BP is not applicable because no decommissioning is currently envisaged. In the Czech Republic's case, the notice period is 12 months where an alternative product is available. In Lithuania, it varies from 3 years as a general notice period to 1 year if an alternative product is available. In Denmark, the NRA imposed a shorter notice period for all the cases than stipulated in the BP. In Italy, the 5-year notice period may be reduced to 3 years depending on the availability of an alternative service and to 1 year in Spain in cases where no LLU operators are present in the MDF, and to 6 months in the case of MDF/street cabinet with no wholesale services at all.

10.2.2. WCA market

Since we collected data for the Phase 2 Report, the WCA market has been reviewed by 7 NRAs ('the WCA participants'). In Romania, the market for WCA was never regulated and the retail market for broadband internet access was considered to be competitive without regulation of the wholesale market. The Romania NRA therefore found that ex-ante regulation was not justified.

Table 29 summarises the best practice remedies that have been imposed for each of the WCA participants.

Table 29: Best practice remedies imposed by WCA participants

	Czech Rep.	Germany	Lithuania	Denmark	Italy	Spain	Romania
BP29: switching processes apply equally to NGN / NGA	✓	✓	✓	✓	✓	✓	n/a
BP30: migration framework for legacy network decommissioning	✓*	n/a	✓*	✓*	✓*	✓	n/a
BP31: existing obligations only removed when migration agreed and finished	✓	n/a	✓	✓	*	✓	n/a
BP32: notice periods for legacy networks to reflect various factors	✓	n/a	✓*	[✓]	✓*	✓	n/a
BP33: replacement network active before MDF decommissioning	✓	n/a	✓	✓	✓	✓	n/a

In relation to BP29, all the other WCA participants require that switching procedures apply equally to legacy and NGA wholesale products.

In Germany, the NRA stated that BP30 to BP33 are not applicable because no decommissioning is planned.

Regarding the migration framework (BP30), NRAs in the Czech Republic, Lithuania, Italy and Denmark imposed a subset of obligations related to a notice period and the provision of relevant information on network modification.

Regarding the removal of existing obligations until a migration path is agreed and finished (BP31), in Italy, the market analysis did not define specific obligations with regard migration, which are going to be defined in a specific proceeding concerning migration conditions.

In Lithuania, obligations remain in place until a new market analysis is performed before RRT decides whether to remove them. As such, obligations remain in place not until the migration path is finished per se, but until the market review determines that the competition is effective in the Market 3b and/or a certain regulation in market 3a is sufficient enough to ensure effective competition in certain retail markets.

Regarding notice periods for legacy networks (BP32), the Lithuanian NRA imposed a notice period taking into account the availability of a fully-fledged alternative. Similarly, in Italy, the availability of a reasonable NGA access product at the same location is taken into account. In Denmark, the NRA defined the notice period by taking into account factors other than those listed. As well as the listed factors, in Spain, the NRA takes into account the investment and the existence of wholesale inputs such as duct access and VULA/bitstream access to define the notice period.

10.2.3. WHQAFL market

Since we collected data for the Phase 2 Report, the WHQAFL market has been reviewed by 7 NRAs ('the WHQAFL participants'). In Bulgaria, the NRA concluded that there is effective competition in the market and is therefore withdrawing remedies that were imposed in the previous market review. The response from Serbia was incomplete and is awaiting clarification.

Table 30 summarises the best practice remedies that have been imposed for each of the WHQAFL participants.

Table 30: Best practice remedies imposed by WHQAFL participants

	Czech Rep.	Lithuania	Poland	UK	Spain	Bulgaria	Serbia
BP26: switching processes apply equally to NGN / NGA	n/a	✓	n/a	✓	✓	n/a	
BP27: migration framework for legacy decommissioning	n/a	✓*	n/a	✓*	✓*	n/a	
BP28: existing obligations removed only when migration agreed and finished	n/a	✓	n/a	✓	✓	n/a	
BP29: notice periods for legacy networks to reflect various factors	n/a	✓*	n/a	[✓]		n/a	

In both the Czech Republic and Poland, NRAs have segmented market 4 into 2 segments: up to 2 Mbps and above 2 Mbps. SMP was found only on the market up to 2 Mbps.

In Spain's case, since the answers given for market 3b also hold for Market 4 (business NEBA¹²) - the questions are answered on the basis of the regulatory remedies already imposed on wholesale services for leased lines (already answered in Phase 1). Telefonica is deemed to hold an individual SMP position and thus obliged to provide a national high quality bitstream service (the so called business NEBA) that presents two distinct features: high priority traffic (best effort is excluded, only for ancillary purposes) and high quality customer service (e.g. shorter repair time). Business NEBA complements the wholesale services for terminating segments of leased lines that Telefonica must currently provide on a regulated basis. In line with markets 3a and 3b, prices for FTTH based Business NEBA are subject to an economic replicability test (ERT) that would be different from the ERT that would be applied on NEBA local (market 3a) and NEBA (market 3b). The ERT to be applied on NEBA local and NEBA services takes utmost account of the Recommendation on non-discrimination and costing methodology. For example, CNMC foresees that only the flagship products are to be subject to the ERT. However, such an approach is not directly applicable on the tailored and complex bundled offers that shape the business segment. Since the specific details of each test are still to be determined in separate proceedings, no more detailed explanations can be provided at this stage. Copper based Business NEBA remain subject to the cost orientation obligation for price control.

In relation to BP26 (switching processes), the Lithuanian NRA does not require that switching procedures equally apply between legacy and NGA wholesale products.

Regarding the migration framework for decommissioning (BP27), the UK NRA has imposed the general obligation of mandating the SMP operator to give notice of changes and the

¹² NUEVO SERVICIO ETHERNET DE BANDA ANCHA (NEBA), enhanced bitstream ethernet service. NEBA local, a VULA equivalent wholesale service is prescribed by the NRA in market 3a; Business NEBA is the high quality bitstream service that is prescribed by the NRA in Market 4

obligation of a one-year minimum notice period for the withdrawal of very low bandwidth services as a back-stop measure. The same obligation has been imposed by the Lithuanian NRA. In Spain, the NRA has imposed the whole listed range of obligations except the requirement for technology information on network modification. Regarding the decommissioning of legacy networks for terminating segments of leased lines, the NRA in Spain has stipulated that the SMP operator shall communicate twelve months in advance any change in the network that may affect the provision of the wholesale services for terminating segments of leased lines and that the NRA shall have to clear any proposed changes.

Regarding the removal of existing obligations during migration processes(BP28), the UK NRA has maintained the existing obligations for low bandwidth traditional interface services as large volumes of services remain in use and has withdrawn regulation of higher bandwidth traditional interface services (above 8Mbit/s) as only small volumes remain in use. In Spain, the NRA needs to approve technical and economic conditions related to the provision of wholesale leased line services affected by the SMP operator's network changes. In Lithuania, existing obligations remain in place until a new market analysis (Market 4) is undertaken at which point RRT might remove them. As such, obligations remain in place not only until the migration path is finished per se, but until the market in question will be reviewed and it is determined that the competition is effective in Market 4 and/or certain products of Market 3b (regulated or deregulated) are able to sufficiently fulfil the demand for products of a certain quality.

Regarding notice periods for legacy networks(BP29), in the UK, the notice period depends on the time required for competing operators to install replacement circuits as large volumes are still in use. The Lithuania NRA takes into account the availability of a fully-fledged alternative and a reasonable NGA access product for determining the length of the notice period. In Spain, migration conditions and availability of alternative access products requires NRA analysis and approval.

11. Competition objective 10: Fair and coherent access pricing

11.1. Background

This BEREC Common Position identifies the risk of alternative operators facing uncertainty regarding the price of wholesale services should SMP operators create arbitrage opportunities between different wholesale inputs that may dis-incentivise efficient investment by alternative operators. The Common Position also makes reference to SMP operators engaging in margin squeeze and engaging in predatory pricing.

The competition issues identified by BEREC are addressed by the Best Practices 41-59 in the WLA Common Position; Best Practices 34-50 in the WCA Common Position; and Best Practices 30-37 in the WHQAFL Common Position. These can be summarised as follows:

11.2. Analysis by best practice

11.2.1. WLA market

Since we collected data for the Phase 2 Report the WLA market has been reviewed by 8 NRAs ('the WLA participants'). In Romania, regulation has been withdrawn from the WLA market, since it was found to be effectively competitive.

The response from Serbia was incomplete and is awaiting clarification.

Table 31 summarises the best practice remedies that have been imposed for each of the WLA participants.

Table 31: Best practice remedies imposed by WLA participants

	Czech Rep.	Germany	Lithuania	Denmark	Italy	Spain	Romania	Serbia
BP41: pricing based on efficient entrant	✓	✓	✓	✓	✓	✓	n/a	✓
BP42: pricing incentives (competition / investment)	✓	✓	✓	✓	✓	✓	n/a	
BP43: pricing obligations for regulated products	✓	✓	✓	✓	✓	✓	n/a	✓
BP44: pricing reflective of regulatory and market conditions	✓ x	✓ x	✓ x	✓ x	✓ x	✓ x	n/a	
BP45: price controls allow recovery of efficiently incurred costs and follow cost causality	✓	✓	✓	✓	✓	✓	n/a	✓
BP46: competitive neutral pricing signals	✓	✓	✓	✓	✓	✓	n/a	
BP47: remedies for excess profitability	✓	✓	✓	✓	✓	✓	n/a	✓
BP48: ND pricing	✓	✓	✓	✓	✓	✓	n/a	✓
BP49: margin squeeze obligations	✓	✓	✓	✓	✓	✓	n/a	✓
BP50: sufficient margin to facilitate competitive investment	✓	✓	✓	✓	✓	✓	n/a	✓
BP51: NGA input pricing in line with legacy products	✓	✓	✓	✓	✓	✓	n/a	
BP52: NGA access pricing consistent with legacy	✓	✓	✓	✓	✓	✓	n/a	
BP53: cost allocation rules for duct access	✓	✓	✓	[✓]	✓	✓	n/a	
BP54: separate NGA risk adjustment	n/a	n/a	n/a	x	✓	n/a	n/a	
BP55: prices to reflect differences in risk	✓	✓	✓	x	x	x	n/a	
BP56: risk balance considerations for long term contracts	✓	✓	✓	x	✓	x	n/a	
BP57: ND discounts	✓	✓	✓	✓	✓	x	n/a	✓

	Czech Rep.	Germany	Lithuania	Denmark	Italy	Spain	Romania	Serbia
BP58: volume discounts aimed at higher penetration / lower unit costs	n/a	✓	✓	n/a	✓	n/a	n/a	n/a
BP59: volume discounts not to foreclose market	✓	n/a	n/a	n/a	n/a	n/a	n/a	

All NRAs that regulate WLA have implemented BPs 41-43.

With regard to BP44, the NRAs from the Czech Republic, Germany, Lithuania, Denmark and Italy take account of the prioritisation of regulatory objectives when determining the cost methodology. In Spain, the NRA takes account of prevailing market conditions and 'other' factors, namely 'ensuring that cost oriented LLU based retail products constitute a copper anchor' (since LLU prices are set on a cost oriented basis, the copper based retail broadband product is considered to be priced at a level that constrains NGA prices) and subjecting retail products to an ERT (Economic replicability Test).

BPs 47-53 are implemented by all NRAs regulating WLA.

Regarding BP53 (cost allocation rules for duct access), all NRAs used cost allocation rules for duct access; the Danish NRA used the number of wholesale customers as the allocation key. With regard to BP54 (a separate NGA risk adjustment), no NGA specific risk was identified by the NRAs in the Czech Republic, Germany, Lithuania and Spain. In Denmark, the NRA has defined an overall risk premium for parts of the FFTH-network based on the principles stated in the 2010 NGA Recommendation. Only in Italy did the NRA identify an NGA specific risk and, as a result, it differentiated the risks borne by the SMP operator by taking into account both (i) the likely demand for NGA-based services and customers' willingness to pay a pricing premium; and (ii) developments in penetration and pricing premiums over time.

The Danish NRA explained that no such pricing schemes to reflect differences in risk (BP55) were proposed by the SMP operator or by any other stakeholder (likewise for BP56). The Danish NRA did consider the option of replacing the LRAIC costing methodology with an ERT (economic replicability test), i.e., a margin squeeze test, but found that market conditions at the time could not support such a move. Regarding BP55 (prices to reflect differences in risk), the Italian NRA stated that its assessment is based on underlying costs although the differences in risk for investors are reflected by applying a risk premium in the differentiated costing methodologies for FTTC and FTTH. CNMC is scheduled to set the details of the methodology for the ERT in a separate proceeding. As a result, issues such as long term access prices and discounts that the SMP operator could propose for the price of the regulated NGA wholesale access services will be addressed within this proceeding. This also applies for BP56 (risk balance considerations for long term contracts) and BP57 (discounts not being discriminatory) in Spain.

In relation to BP58 (volume discounts aimed at higher penetration / lower unit costs) and BP59 (volume discounts not to foreclose market), in Denmark, no volume discounts are allowed. The NRA also stated that the issue of volume discounts has not been brought up by the industry.

The Italian NRA stated that volume discounts are allowed for VULA services and in general to foster migration to NGA services.

11.2.2. WCA market

Since we collected data for the Phase 2 monitoring report, the WCA market has been reviewed by 7 NRAs ('the WCA participants'). Table 32 summarises the best practice remedies that have been imposed for each of the WCA participants.

In Romania, the market for WCA was never regulated and the retail market for broadband internet access was considered to be competitive without regulation of the wholesale market. The Romania NRA therefore found that ex-ante regulation was not justified. Table 32 summarises the best practice remedies that have been imposed for each of the WCA participants.

Table 32: Best practice remedies imposed by WCA participants

	Czech Rep.	Germany	Lithuania	Denmark	Italy	Spain	Romania
BP34: pricing based on efficient entrant	✓	✓	✓	✓	✓	✓	n/a
BP35: pricing incentives (investment / competition)	✓	✓	✓	✓	✓	✓	n/a
BP36: pricing obligations for regulated products	✗	✓	✓	✓	✓	✓	n/a
BP37: pricing reflective of regulatory and market conditions	✗	✓✗	✓✗	✓✗	✓✗	✓✗	n/a
BP38: price controls allow recovery of efficiently incurred costs and follow cost causality	✗	✓	✓	✓	✓	✓	n/a
BP39: competitive neutral pricing signals	✗	✓	✓	✓	✓	✓	n/a
BP40: ND pricing	✓	✓	✓	✓	✓	✓	n/a
BP41: No ex ante pricing if EOI / margin squeeze test							n/a
BP42: margin squeeze obligations	✓	✓	✓	✓	✓	✓	n/a
BP43: sufficient margin to facilitate competitive investment	✓	✓	✓	✓	✓	✓	n/a
BPs applicable to pricing of bitstream based on NGA only							
BP44: NGA access pricing consistent with legacy	✓	✓	✓	✓	✓	✓	n/a
BP45: separate NGA risk adjustment	n/a	n/a	n/a	✗	✓	n/a	n/a
BP46: prices to reflect differences in risk	✓	✓	✓	✗	✗	✗	n/a
BP47: risk balance considerations for long term contracts	✓	✓	✓	✗	✓	✗	n/a

	Czech Rep.	Germany	Lithuania	Denmark	Italy	Spain	Romania
BP48: ND discounts	✓	✓	✓	✓	✓	* Spain	n/a
BP49: volume discounts aimed at higher penetration / lower unit costs	n/a	✓	✓	n/a	✓	n/a	n/a
BP50: volume discounts not to foreclose market	✓	n/a	n/a	n/a	n/a	n/a	n/a

Most NRAs that regulate WCA have implemented BPs 34-36.

In relation to BP34 (pricing based on efficient entrant), the Czech NRA had implemented the BP, but it also explained that there is no specific charge control on this market. Instead, the price of access is set, as part of a non-discrimination obligation, at a level which enables an efficient entrant to compete with the SMP operator, i.e. a margin squeeze assessment. In relation to BP36 (pricing obligations for regulated products), it also stated that the SMP operator is not required to provide regulated products based on an explicit pricing obligation, but the remedies stem from the relevant market analysis and more specifically from the high level of infrastructure based competition in the retail market. In such circumstances, the NRA has found that margin squeeze assessment (within the non-discrimination obligation) has long proved to be sufficient. The same explanation is provided for BPs 37, 38 and 39.

With regard to BP37 (pricing reflective of regulatory and market conditions), the NRAs from Germany, Lithuania, Denmark and Italy take account of the prioritisation of regulatory objectives when determining the cost methodology. In Spain, the NRA takes account of prevailing market conditions and 'other' factors, namely 'ensuring that cost oriented LLU based retail products constitute a copper anchor' (since LLU prices are set on a cost oriented basis, the copper based retail broadband product is considered to be priced at a level that constrains NGA prices), and subjecting retail products to an ERT (Economic replicability Test).

BPs 40-44 are implemented by all NRAs regulating WCA.

With regard to BP45 (separate NGA risk adjustment), no NGA specific risk was identified by the NRAs in the Czech Republic, Germany, Lithuania and Spain. In Denmark, the NRA has defined an overall risk premium for parts of the FFTH-network based on the principles stated in the 2010 NGA Recommendation. Only in Italy did the NRA identify an NGA specific risk and, as a result, it differentiated the risks borne by the SMP operator by taking into account both (i) the likely demand for NGA-based services and customers' willingness to pay a pricing premium; and (ii) developments in penetration and pricing premiums over time.

For BP 46, the Danish NRA explained that no such pricing schemes were proposed (likewise for BP47) by the SMP operator or by any other stakeholder. The Danish NRA did consider the option of replacing the LRAIC costing methodology with an ERT (economic replicability test), i.e., a margin squeeze test, but found that market conditions at the time could not support such a move. The Italian NRA stated that its assessment is based on underlying costs; however,

the differences in risk for investors are reflected by applying risk premium in the differentiated costing methodologies for FTTC and FTTH. The Spanish NRA stated that such issues would be addressed in a separate proceeding on the Economic Replicability Test (ERT) that is due to be carried out. This also applies for BPs 47 and 48 in Spain.

In relation to BPs 49 and 50, in Denmark, no volume discounts are allowed. The NRA also stated that the issue of volume discounts has not been brought up by the industry. The Italian NRA stated that volume discounts are allowed for VULA services once they have been approved by the regulator. In Spain, an assessment of volume discounts is to be addressed later under the aforementioned ERT proceeding.

11.2.3. WHQAFL market

Since we collected data for the Phase 2 Report the WHQAFL market has been reviewed by 7 NRAs ('the WHQAFL participants'). In Bulgaria, regulation has been withdrawn from the WHQAFL market, since it was found to be effectively competitive.

The response from Serbia was incomplete and is awaiting clarification.

Table 33 summarises the best practice remedies that have been imposed for each of the WHQAFL participants.

Table 33: Best practice remedies imposed by WHQAFL participants

	Czech Rep.	Lithuania	Poland	UK	Spain	Bulgaria	Serbia
BP30: pricing based on efficient entrant	n/a	✓	✓	✓	✓	n/a	✓
BP31: pricing incentives (competition / investment)	n/a	✓	✓	✓	✓	n/a	
BP32: pricing obligations for regulated products	n/a	✓	✓	✓	✓	n/a	✓
BP33: pricing reflective of regulatory and market conditions	n/a	✓ x	✓ x	[✓]	✓ x	n/a	✓ x
BP34: price controls allow recovery of efficiently incurred costs and follow cost causality	n/a	✓	✓	✓	✓	n/a	✓
BP34a: ensuring services that are technically similar are priced consistently	n/a		✓	✓	✓	n/a	
BP34b: obligations relating to cost accounting and/or accounting separation	n/a		✓	✓	✓	n/a	
BP35: ND pricing	n/a		✓	✓	✓	n/a	
BP36: margin squeeze obligations	n/a		✓	✓	✓	n/a	
BP37: ND discounts	n/a		✓	✓	✓	n/a	

All NRAs that regulate WHQAFL have implemented BPs 30-32.

With regard to BP33 (pricing reflective of regulatory and market conditions), the NRAs from Poland, Lithuania, Serbia and Spain take account of the prioritisation of regulatory objectives when determining the cost methodology.

With regard to BP36, the Lithuania NRA stated that it has not imposed a specific margin squeeze remedy, but non-discrimination obligations should prevent margin squeezes.

12. Innovative approaches to regulation

As part of this exercise, we posed the following questions to NRAs:

“Please describe how your NRA sees the potential for regulatory innovation in relation to [WLA/WBA/ WHQAFL] markets, detailing any significant measure you may have put in place in that area”.

The aim of this question was to try and capture any innovative regulatory approaches adopted by NRAs which could potentially be considered as part of any future revision or update of the BEREC BPs.

In Germany, the deployment of vectoring has been chosen, resulting in an increase in the number of entities having to provide WCA (any operator that uses VDSL vectoring can preclude others from using VDSL in its area of deployment). This means that many access seekers, previously relying mainly on LLU (using ADSL or VDSL from the local exchange) will rely on WCA (bitstream products) or virtual unbundled products (VULA) to provide broadband services, increasing the need for WCA access products. The demand patterns for WLA may of course change in the future.

In Spain, an innovative approach was chosen with respect to FTTH access: the municipalities in which competitive MDFs are located which are also competitive for NGA products are deemed competitive (thereby taking into account that investment on FTTH will extend to the complete municipality) and are not subject to an access obligation for WLA (a VULA type product).

In the UK, the main innovation has been in relation to quality of service whereby Ofcom have imposed minimum standards. Ofcom found that the SMP provider's quality of service for Ethernet leased line provisioning had been poor for an extended period, notwithstanding that it was subject to an Equivalence of Inputs (EOI) obligation. Lead times for orders requiring network construction had lengthened considerably and the SMP provider repeatedly rescheduled provisioning dates, creating great uncertainty for businesses. Ofcom concluded that Ethernet provisioning performance was not reflective of conditions in a competitive market and that the extended period of poor performance demonstrated that the SMP provider had insufficient incentive to improve. As a result, Ofcom imposed minimum standards requiring the SMP provider to reduce provisioning lead times, improve delivery date certainty and to reduce the 'tail' of long overdue provisioning orders. It also imposed a minimum standard on repair performance to prevent the SMP provider sacrificing repair performance to improve provisioning. These minimum standards are separate from obligations imposed on the SMP

provider to provide appropriate SLAs and SLGs and failure to achieve them in any particular year could result in breach of SMP obligations and a fine from the regulator.

Annex 1: Description of best practices

Competition objective 1: Assurance of access

Description of best practice remedy	WLA	WCA	WHQAFL
NRAs should impose the appropriate and proportionate access products to reflect national circumstances	BP1	BP1	BP1
NRAs' remedies should be based on the ladder of investment principle	BP2	BP2	BP2
NRAs should encourage infrastructure competition at the deepest level where it is reasonable	BP3	BP3	BP3
To avoid competitive distortions, access should be mandated regardless of technical solution (insofar as it is proportionate)	BP4	BP4	BP4
When imposing remedies, implementation should take account of the viability of the remedy	BP5	n/a	n/a
NRAs should impose bitstream access products including the appropriate level of handover	n/a	BP5	n/a
<u>Access products at specific access points:</u> Unbundled access to the fibre loop in the case of FTTH. For P2P the ODF is the appropriate access point	BP6a	n/a	n/a
<u>Access products at specific access points:</u> Unbundled access to the fibre loop in the case of FTTH For P2MP, the access point is typically an access point downstream from the MPoP	BP6b	n/a	n/a
The last splitter is the unique access point for physical unbundled access (as long as no alternative for unbundling at the MPoP is available). The design of P2MP needs to take account of the location of the splitter	BP6b (i)	n/a	n/a

Description of best practice remedy	WLA	WCA	WHQAFL
Whenever the access point is downstream of the MPoP the remedies imposed need to encompass the access point in combination with an appropriate product between the access point and the MPoP	BP6b (ii)	n/a	n/a
Until any feasible technologies allowing physical unbundling at the MPoP become available, the NRA should consider imposing an active remedy replicating as much as possible physical unbundling	BP6b (iii)	n/a	n/a
<u>Access products at specific access points:</u> NRAs should impose unbundled access to the copper loop at the MDF	BP7a	n/a	n/a
<u>Access products at specific access points:</u> In the case of FTTN, the copper loop is properly accessed at a concentration point downstream of MPoP	BP7b	n/a	n/a
<u>Access products at specific access points:</u> NRAs may consider imposing an active remedy providing access at the MPoP replicating as much as possible physical unbundling	BP7c	n/a	n/a
<u>Access products at specific access points:</u> In case access to in-house cabling is not included in the (copper) loop it should be granted if applicable under private law	BP8	n/a	n/a
<u>Access products to reach access point:</u> NRAs should impose an obligation for an access product to reach the access point from the MPoP <u>Access product to reach the bitstream access point:</u> NRAs should impose an obligation ensuring that the bitstream access point can be reached with an appropriate remedy	BP9	BP6	n/a
<u>Access products to reach access point:</u> NRAs should impose an obligation to ensure that the MPoP can be connected to the operators' infrastructure with an appropriate remedy	BP10	n/a	n/a

Description of best practice remedy	WLA	WCA	WHQAFL
<u>Access products to reach access point or Access product to reach the bitstream access point:</u> Obligations to reach the access point should be designed to prevent strategic withholding of capacity	BP11	BP7	n/a
<u>Access products to reach access point:</u> Access to civil engineering infrastructure between the MPoP and the customer premises should be ensured by the NRA	BP12	n/a	n/a
This should take into account access to manholes and derivation points	BP12a	n/a	n/a
The NRA should define rules for optimising space	BP12b	n/a	n/a
Prices should be cost oriented	BP12c	n/a	n/a
<u>Access products to reach access point:</u> Where necessary NRAs should impose dark fibre/leased lines as an independent measure or subsidiary measure to duct access	BP13	n/a	n/a
NRAs should require SMP operators to provide network access where an alternative operator reasonably requests it	BP14	BP8	BP5
If access to new products and services is not included through the review of the Reference Offer (RO), NRAs should impose an obligation on SMP operators requiring them to publish the process specifying how they will deal with requests	BP15	BP9	BP6
The process should detail how to make the request, the information required and timescales	BP15a	BP9a	BP6a
NRAs should impose timescales for dealing with requests	BP15b	BP9b	BP6b
If considered feasible, access should be given to new products promptly	BP15c	BP9c	BP6c
When new services and products are made available, NRAs should ensure that they are captured by the relevant SMP obligations already imposed on the SMP operator	BP15d	BP9d	BP6d

Competition objective 2: Assurance of co-location at the access point (e.g. MDF, street cabinet, concentration point) and other associated facilities

Description of best practice remedy	WLA	WCA	WHQAFL
NRAs should impose obligations with regard to the provision of co-location and other associated facilities on a cost-oriented basis under clear rules and terms approved by the regulator	BP16	BP10	BP7

Competition objective 3: Level playing field

Description of best practice remedy	WLA	WCA	WHQAFL
NRAs should impose a general obligation of non-discrimination	BP17	BP11	BP8
NRAs should further clarify how the non-discrimination obligation is interpreted on a case-by-case basis	BP18	BP12	BP9
NRAs should impose an obligation on SMP operators requiring equivalence and justify the form of equivalence imposed	BP19	BP13	BP10
NRAs should consider imposing functional separation as remedy of last resort	BP20	BP14	BP11

Competition objective 4: Avoidance of unjustified first mover advantage

Description of best practice remedy	WLA	WCA	WHQAFL
NRAs should put in place a regime that ensures the technical and economic replicability of the new downstream services introduced by SMP players	BP21	BP15	BP12
Where SMP operators need to supply a new wholesale product, NRAs should impose an obligation on SMP operators regarding the timely availability of information according to lead times	BP22	BP16	BP13
In relation to NGA 6 months might be reasonable	n/a	BP17	n/a
NRAs should ensure that alternative operators have the ability to influence the decisions regarding the characteristics of the new wholesale product	BP23	BP18	BP14
Where relevant, NRAs should impose a requirement in relation to lead times regarding the removal of existing wholesale inputs	BP24	BP19	BP15
Information on an SMPs newly rolled out NGA network should be available (a) well in advance and on a non-discriminatory basis; and (b) periodically updated if necessary	BP25	BP20	n/a

Competition objective 5: Transparency

Description of best practice remedy	WLA	WCA	WHQAFL
NRAs should require SMP operators to provide clarity of terms and conditions by publishing a RO. The key element of which should be specified or approved by the NRA	BP26	BP21	BP16
NRAs should require SMP operators to take account any reasonable views of wholesale customers in their RO	BP26a	BP21a	BP16a
NRAs should require SMP operators to publish RO within a reasonable time of access being granted	BP26b	BP21b	BP16b
NRAs should require SMP operators to update the RO as necessary in a timely manner	BP26c	BP21c	BP16c
Where applicable, NRAs should impose an obligation on SMP operators in relation to the minimum amount of information to be made available in the RO	BP26d	BP21d	BP16d
After lifting an obligation on the RO, NRAs should ensure that SMP operators provide provisions for the change in the contractual conditions on the basis of that RO	BP26e	BP21e	BP16e
NRAs should require SMP operators to make certain information available to all operators within a reasonable period of time i.e. KPIs, planned changes to infrastructure	BP27	BP22	BP17
NRAs should consider setting up a civil infrastructure database containing information of all ducts of the SMP operator	BP28	n/a	n/a

Competition objective 6: Reasonable quality of access products - technical issues

Description of best practice remedy	WLA	WCA	WHQAFL
NRAs should choose appropriate measures of control including: (a) An obligation to publish RO; and (b) obligation to meet all reasonable requests and which is periodically reviewed by NRA	BP29	BP23	n/a
NRAs should ensure that detailed information about the characteristics of the access product are available to alternative operators (including which technologies are allowed at each site)	BP30	BP24	n/a
NRAs should ensure that rules are in place to prevent mutual interference of signals	BP31	n/a	n/a
NRAs should require that SMP operators provide a RO which includes relevant technical information	n/a	n/a	BP18
NRAs should encourage SMP operators to adhere to European or global technical standards (where feasible)	n/a	n/a	BP19
NRAs should require the interconnection of leased lines is possible at a wide range of convenient locations	n/a	n/a	BP20
For wholesale leased line services that exclude trunk segments, NRAs should ensure that end-to-end wholesale leased lines are available in circumstances where interconnecting lines would be technically infeasible or uneconomic	n/a	n/a	BP21

Competition objective 7: Reasonable quality of access products – operational aspects

Description of best practice remedy	WLA	WCA	WHQAFL
NRAs should require SMP operators to provide a reasonable defined level of service	BP32	BP25	BP22
SLAs should cover specific areas	BP32a	BP25a	BP22a
SLAs should be made available to wholesale operators	BP32b	BP25b	BP22b
NRAs should take oversight for the process of setting SLAs	BP32c	BP25c	BP22c
SLAs should take into account differences in customer requirements	BP32d	BP25d	BP22d
NRAs should impose a requirement on SMP operators to provide SLGs	BP33	BP26	BP23
SLGs should cover all necessary specific areas	BP33a	BP26a	BP23a
SLG payments should be made without undue delay (with a pre-established process for payment and billing)	BP33b	BP26b	BP23b
NRAs should take oversight for the process of setting SLGs	BP33c	BP26c	BP23c

SLGs should be made available to all alternative operators (irrespective of the size of purchases)	BP33d	BP26d	BP23d
NRAs should impose a generic requirement on SMP operators to provide KPIs as a means of monitoring non-discrimination and compliance obligations	BP34	BP27	BP24
KPIs should cover all necessary specific areas	BP34a	BP27a	BP24a
The results of monitoring KPIs should be made available to all operators in the market	BP34b	BP27b	BP24b
NRAs should take oversight for the process of setting KPIs	BP34c	BP27c	BP24c

Competition objective 8: Assurance of efficient and convenient wholesale switching

Description of best practice remedy	WLA	WCA	WHQAFL
NRAs should impose obligations to ensure that wholesale switching processes are speedy and efficient	BP35	BP28	BP25
NRAs should require that the maximum allowed downtime during wholesale switching is the lowest possible	BP35a	BP28a	BP25a
NRAs should require that the price of the switch does not act as a barrier to switching	BP35b	BP28b	BP25b
Where necessary, NRAs should put in place measures to facilitate bulk wholesale switching process and ensure these are non-discriminatory	BP35c	BP28c	BP25c
NRAs should require that the transaction time required to process wholesale switching is as low as possible	BP35d	BP28d	BP25d
NRAs should require SMP players to introduce SLAs/SLGs and KPIs to ensure the efficiency of the switching process	BP35e	BP28e	BP25e

Competition objective 9: Assurance of efficient migration processes from legacy to NGN/NGA network

Description of best practice remedy	WLA	WCA	WHQAFL
NRAs should require that switching procedures equally apply between legacy and NGN/NGA wholesale products	BP36	BP29	BP26
Where an SMP intends to decommission its legacy network the NRA should impose obligations in relation to the framework for migration; notice period and an obligation for incumbent to provide all relevant information	BP37	BP30	BP27
NRAs should require that existing obligations remain in place until migration path is agreed and finished	BP38	BP31	BP28
When imposing a notice period for phasing out a legacy network the NRA should consider the notice period is likely to be longer for locations; the availability of a full-fledged alternative; and reasonable migration period for a switch of wholesale products	BP39	BP32	BP29
A notice period of 5 years for decommissioning MDFs may be appropriate	BP40	n/a	n/a
The replacement network is active in adequate advance of the decommissioning of MDFs	n/a	BP33	n/a

Competition objective 10: Fair and coherent access pricing

Description of best practice remedy	WLA	WCA	WHQAFL
NRAs should ensure that with reasonable certainty the price of access will permit an efficient entrant to compete with the SMP operator	BP41	BP34	BP30
When determining pricing regulation, NRAs need to consider that it incentivises both efficient investment and sustainable competition	BP42	BP35	BP31
Where appropriate and proportionate, NRAs should require SMP operators to provide regulated products based on an explicit pricing obligation	BP43	BP36	BP32
NRAs should determine the costing methodology taking account of the prioritisation of regulatory objectives; and prevailing market conditions	BP44	BP37	BP33
When setting a cost oriented price control obligation, NRAs should consider the relevant costing methodology to be used for setting charges. This must allow the recovery of efficiently incurred costs and follow cost causality	BP45	BP38	BP34
Prices for services that are technically similar should be priced similarly	n/a	n/a	BP34a
Where prices are cost oriented, NRAs should impose obligations in relation to cost accounting and/or accounting separation	n/a	n/a	BP34b

The access price should send the correct economic signals i.e. should be competitively neutral;	BP46	BP39	n/a
NRAs should impose regulatory remedies that avoid excessive profitability	BP47	n/a	n/a
The effective price granted by the SMP operator should not be discriminatory	BP48	BP40	BP35
An ex ante pricing remedy may be unnecessary if there is no risk of excessive pricing due to strong indirect constraints or remedies imposed in markets 4 and 5 regarding EOI and a margin squeeze test	n/a	BP41	n/a
NRAs should put in place obligations preventing SMP operators engaging in margin squeeze	BP49	BP42	BP36
NRAs may need to take steps to ensure that the margin between upstream and downstream services is sufficient to facilitate investment (by alternative operators)	BP50	BP43	n/a
NGA WLA only: NRAs should ensure that the pricing of inputs to NGA access products is in line as the same products when used for legacy access products	BP51	n/a	n/a
NGA WLA/WCA only: NRAs should ensure that the pricing of NGA access products is consistent with the pricing of legacy access products to set efficient incentives to invest	BP52	BP44	n/a
NGA WLA only: Regarding duct access, the NRA may consider different cost allocation rules	BP53	n/a	n/a
NGA WLA/WCA only: The NRA should consider whether to separate the risk borne by the SMP operator in operating its NGA network from other services	BP54	BP45	n/a
NGA WLA/WCA only: Price differences should reflect differences in risk faced by the investor	BP55	BP46	n/a

NGA WLA/WCA only: When assessing long-term contracts NRAs should strike a balance between lowering the risk for the SMP operator and transferring the risk to other operators	BP56	BP47	n/a
NRAs should ensure that discounts are not discriminatory	BP57	BP48	BP37
NGA WLA/WCA only: The main objective of volume discounts is to increase penetration and lower unit costs	BP58	BP49	n/a
NGA WLA/WCA only: When considering volume discounts, NRAs should consider whether the threshold for minimum efficient scale may curtail competition and foreclose the market	BP59	BP50	n/a

Annex 2: List of Phase 1,2 and 3 participants

Country	NRA	NRAs included in Phase 1			NRAs included in Phase 2			NRAs included in Phase 3		
		WLA	WCA	WHQAFL	WLA	WCA	WHQAFL	WLA	WCA	WHQAFL
Austria	RTR	✓	✓				✓			
Belgium	BIPT			✓						
Bulgaria	CRC				✓	✓				✓
Croatia	HAKOM	✓	✓				✓			
Cyprus	OCECPR	✓	✓				✓			
Czech Republic	CTU							✓	✓	✓
Denmark	DBA							✓	✓	
Estonia	ECA	✓	✓							
Finland	FICORA									
France	ARCEP				✓	✓	✓			
Germany	BNETZA							✓	✓	
Greece	EETT			✓						
Hungary	NMHH									
Iceland	PTA				✓	✓	✓			
Ireland	COMREG	✓	✓	✓						
Italy	AGCOM						✓	✓	✓	
Latvia	SPRK	✓	✓				✓			
Lithuania	RRT							✓	✓	✓
Luxembourg	ILR				✓	✓	✓			
Macedonia	AREK									
Malta	MCA	✓	✓							
Montenegro	EKIP									
Netherlands	ACM	✓	✓		✓					
Norway	NPT	✓	✓							
Poland	UKE					✓				✓
Portugal	ANACOM									

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		NRAs included in Phase 1			NRAs included in Phase 2			NRAs included in Phase 3		
Romania	ANCOM							✓	✓	
Serbia	RATEL							✓		✓
Country	NRA	WLA	WCA	WHQAFL	WLA	WCA	WHQAFL	WLA	WCA	WHQAFL
Slovak Republic	RU									
Slovenia	AKOS									
Spain	CNMC			✓				✓	✓	✓
Sweden	PTS			✓	✓	✓				
Switzerland	COMCOM									
Turkey	BTK				✓	✓	✓			
UK	OFCOM	✓	✓	✓						✓

Annex 3: Analysis of Phases 1, 2 & 3 responses by best practice

1.1 WLA responses

	Austria	Bulgaria	Croatia	Cyprus	Czech Rep.	Denmark	Estonia	France	Germany	Iceland	Ireland 2014	Italy	Latvia	Lithuania	Luxembourg	Malta	Netherlands	Norway	Romania	Serbia	Spain	Sweden	UK	Turkey
BP1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	n/a		✓	✓	✓	✓
BP2	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	n/a		✓	✓	✓	✓
BP3	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	n/a		✓	✓	✓	✓
BP4	✓	✓	✓	✓	✓	✓	✓	[✓]	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	n/a		✓	✓	✓	✓
BP5	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	n/a		✓	✓	✓	✓
BP6a	n/a	n/a	n/a	n/a	n/a	✓	✓	n/a	✗	n/a	✗	✓	✓	✓	✓	n/a	✓	✓	n/a		n/a	[✓]	n/a	n/a
BP6b(i)	✓	✗	✓	n/a	✓	✓	✗	n/a	✗	✓	n/a	✓	✓	n/a	✓	✓	n/a	✓	n/a		✓	n/a	✗	n/a
BP6b(ii)	✗	✗	✓	n/a	✓	✓	✗	n/a	✗	✓	✗	✓	✗	n/a	✓	✗	n/a	✓	n/a		✓	n/a	✗	n/a
BP6b(iii)	✓	✗	✓	n/a	✓	✓	✓	n/a	✗	✗	✓	✓	✓	n/a	✓	✗	✓	✓	n/a		✓	✓	✓	n/a
BP7a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	n/a		✓	✓	✓	✓
BP7b	✓	✓	✓	✓	✓	✗	n/a	n/a	✓	✓	✗	✓	✓	n/a	✓	✓	n/a	✓	n/a		✓	✓	✓	✓
BP7c	✓	[✓]	✓	[✓]	✓	✓	n/a	n/a	✗	✓	✓	✓	✗	n/a	✓	[✓]	n/a	[✓]	n/a		[✓]	n/a	✓	n/a
BP8	✓	✓	✓	[✓]	[✓]	✓	✓	n/a	n/a	✓	n/a	n/a	✗	n/a	✗	n/a	n/a	✓	n/a		[✓]	✓	✗	✓
BP9	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	n/a	✓	✓	✓	✓	n/a		✓	✓	✓	✓
BP10	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	n/a		✓	✓	✓	✓
BP11	✓	✗	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓	n/a		✓	✓	✓	✗

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	Austria	Bulgaria	Croatia	Cyprus	Czech Rep.	Denmark	Estonia	France	Germany	Iceland	Ireland 2014	Italy	Latvia	Lithuania	Luxembourg	Malta	Netherlands	Norway	Romania	Serbia	Spain	Sweden	UK	Turkey
BP12a	x	x	✓	✓	✓	x	x	✓	x	x	✓	✓	✓	✓	x	x	x	✓	n/a		✓	✓	✓	x
BP12b	x	✓	✓	x	✓	x	✓	✓	✓	x	x	✓	✓	✓	x	x	x	x	n/a		✓	x	✓	x
BP12c	✓	✓	✓	✓	✓	x	✓	✓	✓	x	✓	✓	✓	✓	✓	x	n/a	✓	n/a		✓	✓	✓	✓
BP13	✓	✓	✓	✓	x	✓	x	✓	✓	x	✓	✓	✓	✓	✓	✓	✓	✓	n/a		✓	✓	✓	✓
BP14	✓	x	✓	✓	✓	✓	✓	✓	✓	✓	x	✓	✓	✓	✓	✓	✓	✓	n/a		✓	✓	✓	✓
BP15	x	n/a	n/a	✓	✓	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	✓	✓	n/a		n/a	x	✓	n/a
BP15a	x	n/a	n/a	✓	✓	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	✓	✓	n/a		n/a	n/a	✓	n/a
BP15b	x	n/a	n/a	✓	✓	✓	n/a	n/a	n/a	✓	✓	n/a	n/a	n/a	✓	✓	✓	✓	n/a		n/a	✓	✓	n/a
BP15c	x	n/a	n/a	✓	n/a	✓	n/a	n/a	n/a	✓	✓	n/a	n/a	n/a	✓	✓	✓	✓	n/a		n/a	✓	x	n/a
BP15d	x	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓	✓	n/a		✓	n/a	✓	✓
BP16	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	n/a		✓	✓	✓	✓
BP17	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓	✓	✓
BP18	✓	x	✓	n/a	n/a	n/a	n/a	n/a	✓	✓	✓	n/a	x	n/a	✓	n/a	✓	✓	n/a	✓	✓	✓	✓	n/a
BP19	✓	x	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓	✓	✓
EOI, EOO, or both	EOO	n/a	EOO	Both			EOO	Both		EOI	EOO		EOO		EOI	EOO	Both	EOO	n/a			Both	Both	EOI
BP20	n/a	n/a	n/a	n/a	x	x	n/a	n/a	x	n/a	n/a	x	n/a	x	n/a	n/a	n/a	n/a	n/a	x	x	n/a	[✓]	n/a
BP21	✓	x	✓	✓	✓	✓	x	x	[✓]	✓	✓	✓	x	✓	✓	✓	✓	✓	n/a	x	✓	✓	✓	x
BP22	✓	✓	✓	✓	✓	✓	x	✓	✓	✓	✓	✓	x	✓	[✓]	x	✓	✓	n/a	x	✓	✓	✓	✓
BP23	x	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	x	x	✓	x	✓	✓	n/a	n/a	✓	x	✓	✓

	Austria	Bulgaria	Croatia	Cyprus	Czech Rep.	Denmark	Estonia	France	Germany	Iceland	Ireland 2014	Italy	Latvia	Lithuania	Luxembourg	Malta	Netherlands	Norway	Romania	Serbia	Spain	Sweden	UK	Turkey
BP24	n/a	n/a	✓	✓	✓	✓	✗	✗	✗	✓	✓	✓	✓	✓	✓	✗	✓	✓	n/a	n/a	✓	✓	✓	✗
BP25 (a)	✓	✓	✓	✓	✓	✓	✗	[✓]	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	n/a	n/a	✓	✓	✓	n/a
BP25 (b)	✓	[✓]	[✓]	✗	✗	✗	[✓]	[✓]	✓	✓	✓	✓	✓	✗	✓	✓	✓	✓	n/a	n/a	✓	✓	✗	n/a
BP26	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓✗	✓	n/a	✓	✓	✓	✓	✓
BP26a	✗	✗	✓	✓	✓	✗	✗	✓	✓	✗	✗	✓	✓	✗	✓	✗	✓	✓	n/a	✓	✓	✗	✗	✗
BP26b	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓	✓	✓
BP26c	✓	✓	✓	✓	✓	✓	✗	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓	✓	✓
BP26d	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓	✓	✓
BP26e	✓	n/a	✗	✗	✓	✗	✓	✓	✗	n/a	✗	✗	✗	✗	n/a	✗	n/a	✗	n/a	n/a	✗	n/a	✗	✓
BP27	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	n/a	✓	✓	✓	✓	✓
BP28	✗	✗	✓	✓	✗	✗	✗	✓	✓	✗	✗	✓	✓	✗	✗	✗	✗	✗	n/a	✗	✓	✗	✗	✓
BP29	✓	✓	✓	✓	[✓]	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓	✓	✓
BP29: RO reviewed?	✓	✓	✓	✓	<input type="checkbox"/> ✓	✓	✗	✓	✓	✓	✗	✓	✓	✓	✓✗	✓	✗	✓	n/a	n/a	✓	✓	✓	✓
BP30	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	✓	✓	n/a	✗	✓	✓	✓	✓
BP31	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	✓	✗	✓	✓	✗	✓	n/a	n/a	✓	✗	✓	✓
BP32	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓	✗/✓	✓
BP32a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	n/a	✓	✓	✓	✓	✓
BP32b	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓✗	✓	✓	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓	✓	✗

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	Austria	Bulgaria	Croatia	Cyprus	Czech Rep.	Denmark	Estonia	France	Germany	Iceland	Ireland 2014	Italy	Latvia	Lithuania	Luxembourg	Malta	Netherlands	Norway	Romania	Serbia	Spain	Sweden	UK	Turkey
BP32c	✓	✗	✓	✓	✓	[✓]	✓	✓	✓	✓	✗	✓	✓	✗	✓	✓	✓	✓	n/a	✗	✓	✗	✓	✓
BP32d	✓	✗	✓	✗	✓	✗	✓	✓	✗	✗	✓	✓	✗	✓	✗	✗	✓	✗	n/a	✗	✓	✓	✗	✗
BP33	✓	✗	✓	✓	✓	✓	✗	✓	[✓]	✓	✓	✓	✗	✓	✓	✗	✓	✓	n/a	✓	✓	✗	✓	✓
BP33a	✓	n/a	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	✗	✓	✓	✗	✓	✓	n/a	✓	✓	n/a	✓	✓
BP33b	✓	n/a	✓	✓	✓	✓	✗	✗	✓	n/a	✓	✓	✗	✓	✓	✗	✓	✓	n/a	✓	✓	n/a	✓	✓
BP33c	✓	n/a	✓	✓	✓	[✓]	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✓	n/a	✗	✓	n/a	✓	✓
BP33d	✓	n/a	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	✗	✓	✓	✗	✓	✓	n/a	✓	✓	n/a	✓	✓
BP34	✓	✓	✓	✓	✓	✓	[✓]	✓	✓	✓	✓	✓	✓	✓	✓	[✓]	✓	✓	n/a	✓	✓	✓	✓	✓
BP34a	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	n/a	✓	✓	✓	✓	✓
BP34b	✓	✓	✓	✓	✗	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	n/a	✗	✓	✓	✓	✓
BP34c	✓	✓	✓	✓	✓	[✓]	✗	✓	✓	✓	✓	✓	✗/✓	✗	✓	✗	✓	✓	n/a	n/a	✓	✓	✓	✓✗
BP35	✓	✗	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	n/a	n/a	✓	✓	✓	✓
BP35a	✓	✗	✓	✓	✓	✓	✗	✓	✓	✗	✗	✓	✓	✓	✗	✗	✓	✓	n/a	n/a	✓	✓	✓	✗
BP35b	✓	✗	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	n/a	n/a	✓	✓	✓	✓
BP35c	✓	✗	[✓]	✓	✗	✓	[✓]	✗	✗	✗	✓	✗	✓	✗	✗	[✓]	✗	[✓]	n/a	n/a	✓	✓	✓	✓
BP35d	✗	✗	✓	✓	✓	✓	✗	✓	✓	✓	✗	✓	✗	✓	✗	✓	✓	✓	n/a	n/a	✓	✓	✓	✓
BP35e	[✓]	✗	✓	[✓]	✓	✓	[✓]	✓	✓	✓	[✓]	✓	[✓]	✗	✓	[✓]	✓	[✓]	n/a	n/a	✓	[✓]	✓	✓
BP36	✓	✗	✓	✗	✓	✓	✓	✗	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	n/a	n/a	✓	✓	✗	✓
BP37	✓	✓✗	✓	✓	✓✗	✓✗	✓	✓✗	n/a	✓✗	✓	✓✗	✓	✓✗	✓✗	✓	✓	✓	n/a	n/a	✓	✓✗	✗	[✓]
BP38	✓	n/a	✗	✗	✓	✓	✗	✓	n/a	✓	✗	✗	✓	✓	n/a	✗	✓	✓	n/a	n/a	✓	✓	✗	✓

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	Austria	Bulgaria	Croatia	Cyprus	Czech Rep.	Denmark	Estonia	France	Germany	Iceland	Ireland 2014	Italy	Latvia	Lithuania	Luxembourg	Malta	Netherlands	Norway	Romania	Serbia	Spain	Sweden	UK	Turkey
BP39	✓	n/a	✗	✗	✓	✓	✗	[✓]	n/a	✓	✗	✓✗	✓	✗	✓	✗	✓	✓	n/a	n/a	✓	[✓]	✗	✗
BP40	✗	✗	✗/✓	✗	✗	✓	✗	✓	n/a	✓	✗	✓	✗	✗	✓	✗	✗	✗	n/a	n/a	✓	✓	✗	✗
BP41	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	n/a	✓	✓	✓	✓	✓
BP42	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓	✓	✓	n/a		✓	✓	✓	✓
BP43	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓	✓	✓
BP44	✓	✓	✓	✓	✓✗	✓✗	✓	✓✗	✓✗	✓✗	✓	✓✗	n/a	✓✗	✓	✗	✓✗	✓	n/a		✓✗	✓	✓	✓✗
BP45	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	n/a	✓	✓	✓	✓	✓
BP46	✓	✗	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	n/a	✓	✓	✓	✓	✓	n/a		✓	✓	✓	✗
BP47	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓	✓	✓
BP48	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓	✓	✓
BP49	✓	✗	✓	✓	✓	✓	✗	✗	✓	✓	✓	✓	✓	✓	✓✗	✗	✓	✓	n/a	✓	✓	✓	✓	✗
BP50	✓	n/a	✓	✓	✓	✓	✗	✗	✓	✓	✗	✓	✗	✓	✓	✗	✓	✓	n/a	✓	✓	✓	✗	n/a
BP51	✓	✗	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✗	✓	✓	✗	n/a	✓	n/a		✓	✓	✗	✗
BP52	✓	n/a	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✗	✓	✓	n/a		✓	✓	✗	n/a
BP53	✓	n/a	✓	✓	✓	[✓]	✓	✓	✓	✓	✓	✓	✗	✓	✓	✗	n/a	✓	n/a		✓	✓	✓	n/a
BP54	n/a	n/a	✓	✗	n/a	✗	✗	✓	n/a	n/a	✗	✓	✗	n/a	n/a	✗	✓	n/a	n/a		n/a	n/a	✗	n/a
BP55	n/a	n/a	✗	✗	✓	✗	✗	✗	✓	✗	✗	✗	✗	✓	✓	✗	✗	✓	n/a		✗	✗	✗	n/a
BP56	n/a	n/a	✗	✗	✓	✗	✗	✓	✓	✗	✗	✓	✗	✓	✓	✗	✓	✓	n/a		✗	✗	✗	✗
BP57	n/a	✗	✗	✗	✓	✓	✓	n/a	✓	✓	✗	✓	✗	✓	✓	✗	✓	✓	n/a	✓	✗	✓	✗	n/a
BP58	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	✓	n/a	n/a	✓	n/a	✓	n/a	n/a	✓	n/a	n/a		n/a	✓	n/a	n/a

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	Austria	Bulgaria	Croatia	Cyprus	Czech Rep.	Denmark	Estonia	France	Germany	Iceland	Ireland 2014	Italy	Latvia	Lithuania	Luxembourg	Malta	Netherlands	Norway	Romania	Serbia	Spain	Sweden	UK	Turkey
BP59	n/a	n/a	n/a	n/a	✓	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a

1.2 WCA (as was WBA) responses

	Austria	Bulgaria	Czech Rep.	Croatia	Cyprus	Denmark	Estonia	France	Germany	Iceland	Ireland	Italy	Latvia	Lithuania	Luxembourg	Malta	Netherlands	Norway	Poland	Romania	Spain	Sweden	Turkey	UK
BP1	✓	n/a	✓	✓	✓	✓	✓	[✓]	✓	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓	n/a	✓	n/a	✓	✓
BP2	✓	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓	n/a	✓	n/a	✓	✓
BP3	✓	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓	n/a	✓	n/a	✓	✓
BP4	✓	n/a	✓	✓	✓	✓	✓	[✓]	[✓]	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓	n/a	✓	n/a	✓	✓
BP5	✓	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓	n/a	✓	n/a	✓	✓
BP6	✓	n/a	✓	✓	✓	✓	✓	✓	[✓]	✓	✓	✓	✓	✓	✓	n/a	✓	[✓]	✓	n/a	✓	n/a	✓	✓
BP7	✗	n/a	✓	✓	✓	✓	✓	✗	[✓]	✗	✓	✓	✓	✓	✓	n/a	✓	[✓]	✗	n/a	✓	n/a	✗	✓
BP8	✓	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓	n/a	✓	n/a	✓	✓
BP9	✗	n/a	✓	n/a	n/a	n/a	n/a	n/a	n/a	✓	✗	n/a	n/a	n/a	n/a	n/a	n/a	✓	n/a	n/a	n/a	n/a	n/a	✗
BP9a	✗	n/a	✓	n/a	✓	n/a	✓	n/a	n/a	[✓]	✗	n/a	n/a	n/a	n/a	n/a	n/a	✓	n/a	n/a	n/a	n/a	n/a	✓
BP9b	✗	n/a	✓	n/a	✓	✓	✓	n/a	n/a	[✓]	✓	n/a	n/a	✓	✓	n/a	n/a	✓	n/a	n/a	n/a	n/a	✓	✓
BP9c	✗	n/a	n/a	n/a	✓	✓	✓	n/a	✓	✓	✓	n/a	n/a	n/a	✓	n/a	n/a	✓	n/a	n/a	n/a	n/a	n/a	✗
BP9d	✗	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	n/a	✓	n/a	✓	✓	✓	n/a	✓	n/a	✓	✓
BP10	✗	n/a	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓	n/a	✓	n/a	✓	✗
BP11	✓	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓	n/a	✓	n/a	✓	✓
BP12	✓	n/a	n/a	✓	n/a	n/a	✓	n/a	✓	✓✗	n/a	n/a	✗	n/a	✓	n/a	✓	✓	n/a	n/a	✓	n/a	n/a	n/a
BP13	✓	n/a	✓	✓	✗	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	n/a	✓	✓	✓	n/a	✓	n/a	✓	✓
EOI, EOO, or both	EOO	n/a		EOO	✗		EOO	EOO		EOI	Both				EOI	n/a	EOO	EOO	EOO	n/a		n/a	EOO	EOI

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	Austria	Bulgaria	Czech Rep.	Croatia	Cyprus	Denmark	Estonia	France	Germany	Iceland	Ireland	Italy	Latvia	Lithuania	Luxembourg	Malta	Netherlands	Norway	Poland	Romania	Spain	Sweden	Turkey	UK
BP14	n/a	n/a	✘	n/a	n/a	✘	n/a	n/a	✘	n/a	n/a	✘	n/a	✘	n/a	n/a	n/a	n/a	n/a	n/a	✘	n/a	n/a	n/a
BP15	✓	n/a	✓	✓	✓	✓	✘	✘	[✓]	✓	✓	✓	✘	✓	✓	n/a	✓	✓	✓	n/a	✓	n/a	✘	✓
BP16	✓	n/a	✓	✘	✓	✓	✘	✓	✓	✓	✓	✓	✘	✓	✓	n/a	✓	✓	✓	n/a	✓	n/a	✓	✓
BP17	✓	n/a	[✓]	[✓]	✘	[✓]	✘	n/a	[✓]	✓	✓	[✓]	✘	✓	n/a	n/a	✓	✓	✓	n/a	[✓]	n/a	n/a	✘
BP18	✘	n/a	✓	✓	✓	✓	✘	✓	✓	✓	✓	✓	✘	✘	✓	n/a	✘	✓	✓	n/a	✓	n/a	✓	✓
BP19	n/a	n/a	✓	✓	✓	✓	✘	✓	✘	✓	✘	✓	✓	✓	✓	n/a	✘	✓	✘	n/a	✓	n/a	✓	✘
BP20(a)	✓	n/a	✓	✓	✓	✓	✘	✓	✓	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓	n/a	✓	n/a	✘	✘
BP20(b)	✓	n/a	✘	[✓]	✘	✘	✘	✓	✓	✓	✓	✓	✓	✘	✓	n/a	✓	✓	✓	n/a	✓	n/a	✓	✘
BP21	✓	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓	n/a	✓	n/a	✓	✓
BP21a	✘	n/a	✓	✓	✓	✘	✓	✓	✓	✓	✓	✓	✘	✘	✓	n/a	✓	✓	✓	n/a	✓	n/a	✘	✓
BP21b	✓	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓	n/a	✓	n/a	✓	✓
BP21c	✓	n/a	✓	✓	✓	✓	✘	n/a	✘	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓	n/a	✓	n/a	✓	✓
BP21d	✓	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓	n/a	✓	n/a	✓	✓
BP21e	✓	n/a	✓	✘	✘	✘	✓	✓	✘	n/a	✘	✘	✘	✘	n/a	n/a	✘	✘	✓	n/a	✓	n/a	✓	✘
BP22	✓	n/a	✓	✓	✓	✓	✘	✓	✓	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓	n/a	✓	n/a	✓	✓
BP23	✓	n/a	[✓]	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓	n/a	✓	n/a	[✓]	✓
BP23: RO Reviewed?	✓	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓✘	n/a	✘	✓	✓	n/a	✓	n/a	✓	✓
BP24	✓	n/a	✘	✓	✓	✓	✘	✘	✓	✓	✓	✓	✓	✘	✓	n/a	✘	✓	✓	n/a	✓	n/a	✓	✘

	Austria	Bulgaria	Czech Rep.	Croatia	Cyprus	Denmark	Estonia	France	Germany	Iceland	Ireland	Italy	Latvia	Lithuania	Luxembourg	Malta	Netherlands	Norway	Poland	Romania	Spain	Sweden	Turkey	UK
<i>Requirement for SLAs</i>																								
BP25	✓	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	n/a	✓	✓	✓	n/a	✓	n/a	✓	✓
BP25a	✓	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	n/a	✓	✓	✓	n/a	✓	n/a	✓	✓
BP25b	✓	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	n/a	✓	✓	✓	n/a	✓	n/a	✓	✓
BP25c	✓	n/a	✓	✓	✓	[✓]	✓	✓	✓	✓	✓	✓	✗	✗	✓	n/a	✓	✓	✓	n/a	✓	n/a	✓	✗
BP25d	✓	n/a	✗	✓	✗	✗	✓	✓	✗	✗	✗	✓	✗	✓	✗	n/a	✓	✗	✓	n/a	✓	n/a	✗	✓
<i>Requirement for SLGs</i>																								
BP26	✓	n/a	✓	✓	✓	✓	✗	✓	✗	✓	✓	✓	✗	✓	✓	n/a	✓	✓	✓	n/a	✓	n/a	✓	✓
BP26a	✓	n/a	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	✗	✓	✓	n/a	✓	✓	n/a	n/a	✓	n/a	✓	✓
BP26b	✓	n/a	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	✗	✓	✓	n/a	✗	✓	n/a	n/a	✓	n/a	✓	✗
BP26c	✓	n/a	✓	✓	✓	[✓]	✗	✓	✓	✓	✓	✓	✗	✗	✗	n/a	✓	✓	n/a	n/a	✓	n/a	✓	✓
BP26d	✓	n/a	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	✗	✓	✓	n/a	✓	✓	n/a	n/a	✓	n/a	✓	✓
<i>Requirement for KPIs</i>																								
BP27	✓	n/a	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	✗	✓	✓	n/a	✓	✓	✓	n/a	✓	n/a	✓	✗
BP27a	✓	n/a	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	✗	✓	✓	n/a	✓	✓	✓	n/a	✓	n/a	✓	✗
BP27b	✓	n/a	✗	✓	✓	✓	✗	✓	✓	✓	✓	✓	✗	✓	✓	n/a	✓	✓	✓	n/a	✓	n/a	✓	✗
BP27c	✓	n/a	✓	✓	✓	[✓]	✗	✓	✓	✓	✓	✓	✗	✗	✓	n/a	✓	✓	✓	n/a	✓	n/a	✓	✗
BP28	✓	n/a	✓	✓	✓	✓	n/a	✓	✓	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓	n/a	✓	n/a	n/a	✗
BP28a	✓	n/a	✓	✓	✓	✓	n/a	✓	✓	✓	✗	✓	✓	✓	✗	n/a	✓	✓	✗	n/a	✓	n/a	✗	✗
BP28b	✓	n/a	✓	✓	✓	✓	n/a	✓	✓	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✗	n/a	✓	n/a	✓	✗

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	Austria	Bulgaria	Czech Rep.	Croatia	Cyprus	Denmark	Estonia	France	Germany	Iceland	Ireland	Italy	Latvia	Lithuania	Luxembourg	Malta	Netherlands	Norway	Poland	Romania	Spain	Sweden	Turkey	UK
BP28c	[✓]	n/a	✓	[✓]	✓	✓	n/a	✗	✗	✗	✓	✓	✓	✗	✗	n/a	✓	[✓]	✓	n/a	✓	n/a	✓	✗
BP28d	✗	n/a	✓	✓	✓	✓	n/a	✓	✓	✓	✓	✓	✗	✓	✗	n/a	✓	✓	✓	n/a	✓	n/a	✓	✗
BP28e	✓	n/a	✓	✓	[✓]	✓	n/a	[✓]	✓	✓	✓	✓	[✓]	✗	✓	n/a	✓	[✓]	✓	n/a	✓	n/a	✓	✗
BP29	n/a	n/a	✓	✓	✗	✓	✓	✗	✓	✓	✗	✓	✓	✓	✓	n/a	✓	✓	✓	n/a	✓	n/a	✓	✓
BP30	n/a	n/a	✓✗	✓	✓	✓✗	✓	✓✗	n/a	✓	✓	✓✗	✓	✓✗	✓✗	n/a	✓	✓	✓✗	n/a	✓	n/a	✓	✗
BP31	n/a	n/a	✓	✗	✗	✓	✗	n/a	n/a	✓	✗	✗	✓	✓	✗	n/a	✓	✓	✓	n/a	✓	n/a	✓	✗
BP32	n/a	n/a	✓	✗	✗	[✓]	✓	✓	n/a	✓	✗	✓✗	✓	✓✗	✓	n/a	✓	✓	✓	n/a	✓	n/a	✓✗	✗
BP33	n/a	n/a	✓	✗	✗	✓	✗	✗	n/a	✓	✓	✓	✓	✓	✓	n/a	✗	✓	n/a	n/a	✓	n/a	✓	✗
BP34	✓	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	n/a	✓	✓	✓	n/a	✓	n/a	✓	✓
BP35	✓	n/a	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	n/a	✓	✓	✓	n/a	✓	n/a	✓	✓
BP36	✓	n/a	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓	n/a	✓	n/a	✓	✓
BP37	✓	n/a	✗	✓	✓	✓✗	✓	✓✗	✓✗	✓✗	✓	✓✗	✗	✓✗	✓	n/a	✓	✓	✓✗	n/a	✓✗	n/a	✓✗	✓
BP38	✓	n/a	✗	✓	✓	✓	✓	✓	✓	✓	✗	✓	✗	✓	✓	n/a	✗	✓	✓	n/a	✓	n/a	✓	✓
BP39	✓	n/a	✗	✓	✓	✓	✗	✓	✓	✗	✗	✓	✗	✓	✓	n/a	✓	✓	✓	n/a	✓	n/a	✓	✓
BP40	✓	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	n/a	✓	✓	✓	n/a	✓	n/a	✓	✓
BP41																								
BP42	✓	n/a	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	✗	✓	✓	n/a	✓	✓	✓	n/a	✓	n/a	[✓]	✓
BP43	✓	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	n/a	✓	✓	✓	n/a	✓	n/a	✓	✓
<i>BPs applicable to pricing of bitstream based on NGA only</i>																								
BP44	✓	n/a	✓	✗	✓	✓	✓	✗	✓	✓	✓	✓	✗	✓	✓	n/a	✓	✓	✓	n/a	✓	n/a	✓	✓

	Austria	Bulgaria	Czech Rep.	Croatia	Cyprus	Denmark	Estonia	France	Germany	Iceland	Ireland	Italy	Latvia	Lithuania	Luxembourg	Malta	Netherlands	Norway	Poland	Romania	Spain	Sweden	Turkey	UK
BP45	n/a	n/a	n/a	✓	n/a	✗	✗	✗	n/a	✗	n/a	✓	✗	n/a	n/a	n/a	n/a	n/a	✗	n/a	n/a	n/a	✗	n/a
BP46	n/a	n/a	✓	✗	n/a	✗	✗	✗	✓	n/a	n/a	✗	✗	✓	✓	n/a	n/a	✓	✓	n/a	✗	n/a	✗	n/a
BP47	n/a	n/a	✓	✗	✗	✗	✗	✗	✓	n/a	✗	✓	✗	✓	✓	n/a	✓	✓	✗	n/a	✗	n/a	✗	✗
BP48	✓	n/a	✓	✗	✓	✓	✓	✗	✓	✗	✗	✓	✗	✓	✓	n/a	✓	✓	✓	n/a	✗	n/a	✓	✓
BP49																								
BP50	✓	n/a	✓	n/a	✓	n/a	n/a	n/a	n/a	✓	✓	n/a	n/a	n/a	✓	n/a	n/a	✓	✓	n/a	n/a	n/a	✓	✓

1.3 WHQAFL (as was WLL) responses

	Austria	Belgium	Bulgaria	Croatia	Cyprus	Czech Rep.	Denmark	France	Greece	Iceland	Ireland	Italy	Latvia	Lithuania	Luxembourg	Poland	Serbia	Spain 2014	Spain 2016	Sweden	Turkey	UK 2014	UK 2016
BP1	✓	✓	n/a	✓	✓	✓	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓	☐	✓	☐	✓	✓	✓	✓
BP2	✓	✓	n/a	✓	✓	✗	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✗	☐	✓	☐	✗	✗	✓	✓
BP3	✓	✓	n/a	✓	✓	✓	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✗	☐	✓	☐	✗	✓	✓	✓
BP4	✓	✓	n/a	✓	✓	✓	n/a	✗	✓	✓	✓	✓	✓	✓	✓	✓	☐	✓	☐	✓	✗	✓	✓
BP5	✓	✓	n/a	✓	✓	✓	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓	☐	✓	☐	✓	✓	✓	✓
BP6	n/a	n/a	n/a	n/a	✓	n/a	n/a	n/a	n/a	n/a	✓	n/a	n/a	n/a	n/a	n/a		✓	☐	n/a	n/a	✓	✓
BP6a	n/a	n/a	n/a	n/a	✓	n/a	n/a	n/a	n/a	n/a	✓	n/a	n/a	n/a	n/a	n/a		✓	☐	n/a	n/a	✓	✓
BP6b	n/a	✓	n/a	n/a	✓	n/a	n/a	✓	n/a	n/a	✓	n/a	✓	n/a	✓	n/a		✓	☐	✓	✓	✓	✓

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	Austria	Belgium	Bulgaria	Croatia	Cyprus	Czech Rep.	Denmark	France	Greece	Iceland	Ireland	Italy	Latvia	Lithuania	Luxembourg	Poland	Serbia	Spain 2014	Spain 2016	Sweden	Turkey	UK 2014	UK 2016
BP6c	n/a	n/a	n/a	n/a	[✓]	n/a	n/a	✓	n/a	✓	✓	n/a	✓	n/a	✓	n/a		✓	☐	✓	✓	✗	✗
BP6d	✓	✓	n/a	✓	✓	✓	n/a	✓	✓	✓	✓	✓	[✓]	✓	✓	✓	☐	✓	☐	✓	✓	✓	✓
BP7	✓	✓	n/a	✓	✓	✗	n/a	[✓]	✓	✓	✓	✓	✓	✓	✓	✓	☐	✓	☐	✗	✓	✓	✓
BP8	✓	✓	n/a	✓	✓	✓	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BP9	✓	n/a	n/a	✓	✓	n/a	n/a	n/a	n/a	✓✗	✓	n/a	✓	n/a	✓	n/a	✓	✓	✓	n/a	n/a	✓	✓
BP10	✓	✓	n/a	✓	✗	✓	n/a	✓	✓	✗	✓	✓	✗	✓	✓	✓	n/a	✓	✓	✗	✗	✓	✓
EOI, EOO, or both	EOO	EOO	n/a	EOO	✗	EOO	n/a	EOO	EOO	✗	EOO	EOO	✗	☐	EOO	☐	☐	EOO	☐	✗	✗	Both	☐
BP11	n/a	n/a	n/a	n/a	n/a	✗	n/a	n/a	n/a	n/a	n/a	n/a	n/a	✗	n/a	✗	✗	n/a	✗	n/a	n/a	[✓]	✗
BP12	✓	✓	n/a	✓	✓	✗	n/a	✓	✓/✗	✓	✓	✗	✗	✓	✗	✗	✓	✓	✓	n/a	✓✗	✓	✓
BP13	✓	✓	n/a	✓	✓✗	[✓]	n/a	✓	✗	✓	✓	✓✗	✓✗	✓	✓	✗	✓	✓	✗	✓	✓	✓	✓
BP14	✗	✓	n/a	✓	n/a	✗	n/a	✓	✓	✓	✓	✓	✗	✗	✓	✗	n/a	✓	✓	✗	✗	✓	[✓]
BP15	✗	✓	n/a	✓	n/a	✗	n/a	✓	✗	✓	✓	✓	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BP16	✓	✓	n/a	✓	✓	✓	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓
BP16a	✗	✓	n/a	✓	✓	✓	n/a	✓	✓	✓	✓	✓	n/a	✗	✓	✓	✓	✓	✓	n/a	✓	✗	✗
BP16b	✓	✓	n/a	✓	✓	✓	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓
BP16c	✓	✓	n/a	✓	✓	✗	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓
BP16d	✓	✓	n/a	✓	✓	✓	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BP16e	✓	✓	n/a	✓	✗	✓	n/a	✓	✗	✗	✗	✓	n/a	✗	n/a	✓	n/a	✓	✓	✗	✓	✗	✗
BP17	✓	✓	n/a	✓	n/a	✗	n/a	✓	✓	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

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	Austria	Belgium	Bulgaria	Croatia	Cyprus	Czech Rep.	Denmark	France	Greece	Iceland	Ireland	Italy	Latvia	Lithuania	Luxembourg	Poland	Serbia	Spain 2014	Spain 2016	Sweden	Turkey	UK 2014	UK 2016
BP18	✓	✓	n/a	✓	✓	✓	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓
BP19	✓	✗	n/a	✓	✓	✓	n/a	✓	✓	✓	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✓	✓	✓
BP20	✓	✓	n/a	✓	✓	✓	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓	✓	✓	✓
BP21	✓	✓	n/a	n/a	✓	✓	n/a	✓	✓	✓	✗	✓	n/a	✗	✓	✓	n/a	✓	✓	✗	n/a	✓	✓
BP22	✓	✓	n/a	✓	✓	✓	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓
BP22a	✓	✓	n/a	✓	✓	n/a	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓
BP22b	✓	✓	n/a	✓	✓	n/a	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓
BP22c	✓	✓	n/a	✓	✓	n/a	n/a	✓	✓	✓	✓	✓	✓	✗	✓	✓	✗	✓	✓	✗	✓	✓	✓
BP22d	✓	✓	n/a	✗	✗	n/a	n/a	✓	✗	✗	✗	✓	✗	✗	✗	✗	✗	✓	n/a	✗	✗	✗	✗
BP23	✓	✓	n/a	✓	✓	✗	n/a	✓	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓
BP23a	✓	✓	n/a	✓	✓	n/a	n/a	✓	✓	✓	✓	✓	n/a	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓
BP23b	✓	✗	n/a	✓	✓	n/a	n/a	✓	✓	n/a	✓	✓	n/a	✓	✓	✓	✓	✓	✓	✗	✗	✓	✓
BP23c	✓	✓	n/a	✓	✓	n/a	n/a	✓	✓	✓	✓	✓	n/a	✗	✗	✓	✗	✓	✓	✗	✓	✓	✓
BP23d	✓	✓	n/a	✓	[✓]	n/a	n/a	✓	✓	✓	✓	✓	n/a	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓
BP24	✓	✓	n/a	✓	✗	✗	n/a	✓	✓	✓	✓	✓	✗	[✓]	✓	✓	n/a	✓	[✓]	[✓]	✓	✗	✓
BP24a	✓	✓	n/a	✓	✗	n/a	n/a	✓	✓	✓	✓	✓	✗	✓	✓	✓	n/a	✓	✓	✗	✓	✗	✓
BP24b	✓	✓	n/a	✓	✗	n/a	n/a	✓	✓	✓	✓	✓	✗	✗	✓	✓	n/a	✓	✓	✗	✓	✗	✓/✗
BP24c	✓	✓	n/a	✓	✗	n/a	n/a	✓	✓	✓	✓	✓	✗	✗	✓	✓	✗	✓	✓	✗	✗	✗	✓
BP25	✓	✗	n/a	✓	✗	✗	n/a	[✓]	✓	✓	✗	✗	✓✗	✓	✓	✓	n/a	✓	✓	✗	✗	✗	✗
BP25a	✓	✗	n/a	✓	n/a	✗	n/a	✓	✗	✓	✗	✗	✓✗	✓	✗	✗	n/a	✓	✗	✗	✗	✗	✗
BP25b	✓	✗	n/a	✓	✗	✗	n/a	✓	✓	✓	✗	✗	✓✗	✓	✓	✓	n/a	✓	✓	✗	✗	✓	✓

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	Austria	Belgium	Bulgaria	Croatia	Cyprus	Czech Rep.	Denmark	France	Greece	Iceland	Ireland	Italy	Latvia	Lithuania	Luxembourg	Poland	Serbia	Spain 2014	Spain 2016	Sweden	Turkey	UK 2014	UK 2016
BP25c	[✓]	[✓]	n/a	[✓]	✗	✗	n/a	[✓]	[✓]	✓	✗	✓	✓✗	[✓]	✗	✗	n/a	[✓]	✗	✗	✗	✗	✗
BP25d	✓	✗	n/a	✓	n/a	✗	n/a	[✓]	✗	✓	✗	✗	✓✗	✓	✗	✗	n/a	✓	✓	✗	✗	✗	✗
BP25e	✓	[✓]	n/a	✓	✗	✗	n/a	[✓]	[✓]	✓	✗	✗	✗	✗	✓	n/a	n/a	[✓]	✗	✗	✗	✗	✗
BP26	✓	✗	n/a	✓	n/a	n/a	n/a	✓	✗	✓	✗	✗	[✓]	✓	✓	n/a	n/a	✓	✓	✗	✗	✗	✓
BP27	n/a	✓	n/a	✓	✓	n/a	n/a	✓	✓	✓	✗	✗	✗	✓✗	✓✗	n/a	n/a	✓	✓✗	✗	✗	✓	✓✗
BP28	n/a	✓	n/a	✓	✓	n/a	n/a	✓	✗	✓	✗	✗	✗	✓	n/a	n/a	n/a	✓	✓	✗	✗	✗	✓
BP29	n/a	✓	n/a	✓	n/a	n/a	n/a	[✓]	✗	✓	✗	✗	n/a	✓✗	✓	n/a	n/a	✓	□	✗	✗	✗	[✓]
BP30	✓	✓	n/a	✓	✓	n/a	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓
BP31	✓	✓	n/a	✓	✓	n/a	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓	□	✓	✓	✗	✓	✓	✓
BP32	✓	✓	n/a	✓	✓	n/a	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓
BP33	✓	✓	n/a	✓✗	✓✗	n/a	n/a	✓✗	✓	✓✗	✓	✓✗	✓✗	✓✗	✓	✓✗	✓✗	✓	✓✗	✗	✓✗	✓	[✓]
BP34	✓	✓	n/a	✓	✓	n/a	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓
BP34a	✓	✓	n/a	✓	✓	n/a	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BP34b	✓	✓	n/a	✓	✓	n/a	n/a	✓	✓	✓✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓
BP35	✓	✓	n/a	✓	✓	n/a	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BP36	✓	✓	n/a	✗	✓	n/a	n/a	[✓]	✓	✓	✓	✗	✗	[✓]	✗	✓	✓	✓	✓	✗	✓	✓	✓
BP37	✓	✓	n/a	✓	✓	n/a	n/a	✓	✓	✗	✓	✓	✗	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓